DOCUMENT RESUME

ED 078 803 HE 004 437

AUTHOR	Gibb, Richard D.
TITLE	A Master Plan for Public Higher Education in South Dakota.
INSTITUTION	South Dakota State Regents of Education, Pierre.
PUB DATE	Dec 70
NOTE	148p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	Adult Education; Educational Finance; *Educational Planning; Educational Programs; *Governance; *Higher Education; Junior Colleges; *Master Plans; *Statewide Planning; Teacher Salaries; Technical Education; Trustees
IDENTIFIERS	*South Dakota

ABSTRACT

This master plan for higher education in South Dakota addressed itself to several key areas: admissions, retentions and transfers, enrollment projections and building needs, governing structure, academic programs and role of each institution, financial aides, faculty salaries and benefits, and adult and technical education. Some major recommendations were: (1) Two of the state colleges should be closed, or if not closed, converted to junior colleges. Neither of the two institutions was closed but one was made a junior college and technical college branch of the University of South Dakota. (2) The Board approved a recommendation that there be a common course numbering system for all seven campuses and that college credit received by a student from one campus would be fully acceptable as comparable credit on any other state college or university campus within the state. (3) Arrangements also were made for a student who was enrolled on one campus to take courses on another without actually transferring. (4) The plan called for the creation of the Division of Continuing Education. (5) The number of courses with 10 or fewer students must be reduced. (6) All graduate programs must be rejustified to the Board. (Author/MJM)

FILMED FROM BEST AVAILABLE COPY

ED 078803

Provisional

A Master Plan for Public Higher Education in South Dakota

submitted by
Dr. Richard D. Gibb
Commissioner of Higher Education

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

South Dakota
Regents of Education

December 1970

HE 004 437

ED 078803

SOUTH DAKOTA REGENTS OF EDUCATION

Richard Battey
Chairman, Redfield

H. Lauren Lewis
Vice-President, Sioux Falls

James Deam
Secretary, Yankton

Charles Burke
Pierre

John Larson
Kennebec

Harry Witt
Butler

Richard D. Gibb
Commissioner of Higher Education

TABLE OF CONTENTS

Master Plan Committees i

Foreword v

Summary of Findings and Recommendations

Introduction 1

Methodology 4

Review of Previous Studies 7

An Assessment of Public Higher Education in South Dakota 14

Chapter I: Admissions, Retention and Transfer 16

Chapter II: College Enrollments and Building Needs 20

Chapter III: Governing Structure, Number of Institutions, Location and Names 23

- Governing Structure 23
- Number of Institutions, Location and Names 29

Chapter IV: Academic Programs and Role of Each Institution 32

- Academic Programs 33
  - General 33
  - Specific Recommendations 36
  - Graduate Programs 38
  - Engineering 41
  - Industrial Arts 45
  - Special Education 48
  - Course Size 49
  - Accreditation 50
  - Importance of Geography 51
  - Innovations and Experimental Programs 52
  - Junior Colleges 53
- Role of Each Institution 54

Chapter V: Financial Aids, Scholarships, and Tuition 60

Chapter VI: Salaries, Fringe Benefits, and Working Conditions 65

Chapter VII: Technical and Adult Education 67

Appendix A - Engineering

Appendix B - Proposed Programs

ABSTRACT

The fundamental problem of higher education in South Dakota is one of attempting to support more state colleges and universities than can adequately be supported with a state so sparsely populated. It is difficult for a state with 660,000 persons to adequately support seven state colleges and universities at an acceptable quality level.

The "Master Plan for Public Higher Education in South Dakota" has addressed itself to a number of key areas. These include admissions, retentions and transfers; enrollment projections and building needs; governing structure; academic programs and role of each institution; financial aids; faculty salaries and benefits; and adult and technical education. Seven faculty study committees were developed to study the various problem areas and their work was supplemented by that of a students' committee, presidents' committee, and a citizens' advisory committee. Their recommendations were made to the Commissioner of Higher Education who in turn prepared his own report. Some of the more major recommendations were:

1. Two of the state colleges should be closed or, if not closed, converted to junior colleges. Neither of the two institutions was closed but one was made a junior college and technical college branch of the University of South Dakota.

2. The Board approved a recommendation that there be a common course numbering system for all seven campuses and that college credit received by a student from one campus would be fully acceptable as comparable credit on any other state college or university campus within the state.

3. Arrangements also were made for a student who was enrolled on one campus to take courses on another without actually transferring.

4. The plan called for the creation of the Division of Continuing Education in the Regents' central office in Pierre.

5. The number of courses with ten or fewer students must be drastically reduced.

6. All graduate programs must be rejustified to the Board of Regents and if they could not be rejustified, they would be closed.

Additional recommendations approved by the Regents were that each president would indicate when each department and program was officially approved by the Board and, if it was not approved, it would be dropped. Also approved was a recommendation that each president would determine if more than one department or school within his own institution was offering similar courses and programs and, if so, these would be curtailed.

MASTER PLAN ADVISORY COMMITTEES

Citizens Advisory Committee

Mrs. Maylou Amunson, Mobridge
William Arneson, Madison
Charles Card, Britton
Mrs. Gene Cheever, Belle Fourche
Mrs. Shirley Cope, Yankton
Jarvis Davenport, Sturgis
Nick Didier, Rapid City
David Evans, Pierre
Wilbur Foss, Yankton
Warren Grebner, Aberdeen
John Griffin, Sioux Falls
Ernest Ham, New Underwood
Mrs. M. A. Hersrud, Lemmon
William Hustead, Wall
Ted Jennings, Miller
Dave Johnson, Pierre
Harold Knust, Chamberlain
Laverne Maher, Huron
Ed Owens, Sioux Falls
Robert Pearson, Webster
Jack Pier, Pierre
Paul Schoenenberger, Sioux Falls
Mrs. Richard Sewright, Hot Springs
Stan Siegel, Aberdeen
John Sutton, Jr., Agar
Joyce Swan, Rapid City
Gerald Tracey, Watertown
L. W. Turnwall, Huron
Mrs. Andrew Zephier, Flandreau

Faculty Advisory Committee

Clyde Brashier, Dakota State College
Phil Hendrickson, South Dakota State University
Wayne Knutson, University of South Dakota
Carrol Krause, Southern State College
Richard Lawton, Northern State College
William Reuter, South Dakota School of Mines & Technology
Gerald Shryock, Black Hills State College

Presidents Advisory Committee

President Norbert Baumgart, Northern State College
President Richard Bowen, University of South Dakota
President Harry Bowes, Dakota State College
President H. M. Briggs, South Dakota State University
President Harvey Fraser, S.D. School of Mines & Technology
President M. N. Freeman, Black Hills State College
President Allen Millar, Southern State College
Sister M. Evangeline Anderson, Mount Marty College
President Charles Balcer Augustana College
Sister Francis Mary Dunn, Presentation College

Presidents Advisory Committee (Contd.)

President Eldon Graber, Freeman Junior College
President Fred Honkala, Yankton College
President Robert Huddleston, Dakota Wesleyan University
President Richard Timmins Huron College
President Ronald Wells, Sioux Falls College

MASTER PLAN STUDY COMMITTEES

A - Admissions, Retentions and Transfers

Richard Van Beek, Northern State College, Chairman
Robert Adams, University of South Dakota
Douglas Bell, Black Hills State College
Mrs. Gene Cheever, Belle Fourche
Ross Howe, Southern State College
Leighton Palmerton, S.D. School of Mines
Sister Marie Patrice, Presentation College
Howard Peterson, S.D. School of Mines
Frank Smith, Huron College
Junis Storry, South Dakota State University
Jorgen Thompson, Augustana College
Preston Tyrrell, Dakota State College
Joyce Swan, Rapid City

B - College Enrollments and Building Needs

James Pedersen, South Dakota State University, Chairman
Norris Erickson, University of South Dakota
Harland Flemmer, Dakota State College
A. M. Gowan, Sioux Falls College
Keith Jewitt, Black Hills State College
Ralph Johnson, Northern State College
William Matthews, Augustana College
Robert Moore, S.D. School of Mines & Technology
Merton Sherman, Huron College
Robert Strong, Southern State College

C- Governing Structure, Number of Institutions, Location and Names

Cecil Kipling, University of South Dakota, Chairman
Charles Berry, Black Hills State College
Merrill Brown, Dakota State College
Edward Ehrensperger, Yankton College
Dave Evans, Pierre
Mrs. M. A. Hersrud, Lemmon
Thomas Kilian, Augustana College
John Martin, Southern State College
George Moe, S.D. School of Mines & Technology
Jim Ochs, Presentation College
Howard Sauer, South Dakota State University
Stan Siegel, Aberdeen
Robert Thompson, Northern State College

D- Academic Programs and Role of Each Institution

George Rinker, University of South Dakota, Chairman
Mrs. Maylou Amunson, Mobridge
Glen Bachman, Yankton College
L. A. Clarke, Northern State College
Sever Eubank, Black Hills State College
Dale Hanke, Dakota State College
Carl Lutz, S.D. School of Mines & Technology
Eddy Miedema, Southern State College
Leo Spinar, South Dakota State University
Mr. John Sutton, Jr., Agar
Ralph Tingley, Sioux Falls College
Mr. L. W. Turnwall, Huron
Bruce Weier, Mount Marty College

E- Financial Aids and Scholarships

Marvin Schamber, Southern State College, Chairman
Eugene Brinkmeyer, Yankton College
Gilbert Bruns, Black Hills State College
Zora Colburn, South Dakota State University
Frank Maltern, Black Hills State College
Vernon Miller, Dakota State College
Ronald Roland, S.D. School of Mines & Technology
Gordon Rollins, Dakota Wesleyan University
Robert Rutford, University of South Dakota
Sister Norma Sand, Mount Marty College
Don Vogt, Northern State College
Rose Welchert, Mount Marty College

F - Faculty Salaries, Fringe Benefits, and Working Conditions

Russell Brock, Northern State College, Chairman
Keith Birks, Southern State College
Gene Denison, Huron College
Carl Grimm, S.D. School of Mines & Technology
Paul Haivala, Black Hills State College
Thomas Henson, Dakota Wesleyan University
Richard Hinkley, Dakota State College
Mr. Dave Johnson, Pierre
Otto Neuhaus, University of South Dakota
Neil Rheiner, Mount Marty College
John Thompson, South Dakota State University

G - Adult and Technical Education

Lincoln Henry, Black Hills State College, Chairman
Marvin Burroughs, Northern State College
Loren Carlson, University of South Dakota
LeRoy Day, Sioux Falls College
Duane Everett, South Dakota State University
Laurel Iverson, Southern State College
C. Prochaska, Presentation College
Roger Ruark, Dakota Wesleyan University
Lawrence Sattgast, Dakota State College
Elden Stensaas, S.D. School of Mines & Technology

FOREWORD

In February, 1968, the South Dakota Legislature passed a bill, subsequently signed by the Governor, which provided for the creation of the position of Commissioner of Higher Education in South Dakota. The creation of such a position came about partly because of the rather general feeling that if South Dakota was to provide quality education in its institutions of higher education, it would be necessary to provide for strong coordination of the activities of the various institutions. It was hoped that by creating the post of Commissioner of Higher Education, this could be accomplished.

Among other things, the statute provided that "the Commissioner of Higher Education shall be responsible to the Board and shall be removable at the pleasure of the Board . . .". The statute provided further that the Commissioner of Higher Education "shall be responsible for the maintenance of modern, uniform systems of accounting and record keeping at all institutions; the compilation of a budget for the Board for the Office of the Commissioner and for all such public institutions in the state under the Board of Regents; for the development, revision, and modernization of (a) an Academic Master Plan pertaining to all public institutions of higher learning, and (b) a public educational facilities Master Plan; he shall be the principal representative of public higher education, of the Board in all appearances before the Legislature and its official committees and before the Governor, the Budget Director and all administrative tribunals; . . ."

The Commissioner of Higher Education was appointed by the Board of Regents in April, 1968, and assumed his duties on July 1, 1968. The first year of the Commissioner's duties was spent largely in traveling throughout the state, becoming familiar with the operations of each of the institutions, getting acquainted with members of the legislative body, and with others who have an interest in education in the state. In June, 1969, work was formally begun on the development of the Academic Master Plan for Public Higher Education and recommendations derived from that work are enclosed in this report.

One of the really great pleasures in developing the Academic Master Plan was in getting well acquainted with those people who played a role in making the recommendations. We strongly feel that a vast majority of administrators and faculty members in the colleges and universities in South Dakota are dedicated, hardworking, and interested in achieving a quality education for the students. Those who worked on the Master Plan did so at great personal sacrifice. They spent long, long hours preparing for, traveling to, and participating in meetings. They received no additional compensation for their work even though it was over and above what they were normally expected to do. None of them at any time raised any objection to this.

We wish to express our deep gratitude to the members of the seven study committees, the Faculty, Presidents, and Student Advisory Committees and to all the dedicated people who served on the Citizens' Advisory Committee.

I wish to personally thank the members of the Regents' professional and secretarial staff who worked diligently in assisting with the preparation of the plan and the Regents for their patience and understanding during some very difficult times.

Richard D. Gibb
COMMISSIONER OF HIGHER EDUCATION
December 1, 1970

SUMMARY OF FINDINGS AND RECOMMENDATIONS

A. General

1. A number of previous studies of higher education in South Dakota have been carried out dating back to 1918. Although some of the recommendations have been carried out, most have not especially those which involve consolidation of programs and/or institutions.
2. The primary problem in **public** higher education in South Dakota is that of too many colleges and universities.
3. There are too many programs on various campuses with low enrollments and which are of questionable quality.

B. Admissions, Retention and Transfer

1. Not all high school graduates can benefit from a college education. Other kinds of post-secondary opportunities should be made available to them.
2. The recruiting of students should be controlled by offering strong support to the South Dakota Post High School Coordinating Council.
3. Students ranking in the upper two-thirds of their high school class or who achieve satisfactory ACT test scores will be admitted to one of the state colleges and universities. Those not meeting this requirement will be admitted to one of the proposed junior college divisions or one of the state colleges or universities on a deferred basis.
4. It is desirable to have some non-resident and foreign students.
5. A new policy of classification concerning residents and non-residents must be developed.
6. Institutions will determine policies concerning retention of students on their campuses.
7. Credit received from any state institution will be fully acceptable at any other state institution.
8. A common system of course numbering will be developed.
9. Procedures will be developed to enable a student with a registration on one campus to take courses on another without actually transferring.

C. College Enrollments and Building Needs

1. Enrollments in the state colleges and universities are not expected to increase in any large manner in the next ten years.
2. Some additional buildings will be necessary and a considerable amount of remodeling will be necessary for some of the buildings now in operation.

D. Governing Structure, Number of Institutions, Locations and Names

1. There should continue to be a single governing board for public higher education in South Dakota and it should provide for the necessary number of professionally trained staff.
2. The Regents should be renamed the Regents of the South Dakota System of Higher Education.
3. Regents may not be residents of counties in which there are public institutions of higher education.
4. Not more than three Regents may be graduates of any one public institution of higher education in South Dakota.
5. Regents should continue to be present for institutional ceremonial events but should not designate any one as an institutional representative.
6. The School for the Visually Handicapped should become an administrative agency of Northern State College in 1972, and the School for the Deaf should become an administrative agency of the University of South Dakota in 1972.
7. An advisory council should be formed for the purpose of coordinating the educational activities of the state.
8. All non-parochial post-secondary institutions which offer courses for collegiate credit and which receive state aid will come under the jurisdiction of the Regents of Education.
9. The number of state colleges and universities should be decreased from seven to four. Preferably, Dakota State College and Southern State College should be closed and Black Hills State College should become a junior college division of a comprehensive state college in western South Dakota.
10. If it is considered impractical to close any of the campuses, Dakota State College should become a junior college branch of South Dakota State University and Southern State College should become a junior college and technical college branch of the University of South Dakota.

D. Contd.

11. There should be a single comprehensive state college for western South Dakota with the main campus at Rapid City and a junior college campus at Spearfish.

12. If Southern State College becomes a branch of the University, it should be renamed the University of South Dakota at Springfield. If Dakota State College becomes a branch of South Dakota State University, it should be renamed South Dakota State University at Madison.

E. Academic Programs and Role of Each Institution

1. Far too much money has been spent in adding new programs instead of strengthening existing ones.

2. There are far too many courses with ten or fewer students.

3. Far too much money has been spent in the graduate programs.

4. The Legislature must provide more money for higher education and higher education must consolidate programs in order to assist with the financial problems.

5. All program consolidation or elimination will be carried out over a period of time such that problems inherent therein will be minimized.

6. There should be only one professional school or college of each type in South Dakota.

7. The program in Geology at the University should be suspended and only service courses offered. The State Geological Survey should be moved to Rapid City and be operated in connection with the program at SDSM&T.

8. The University of South Dakota should be the only institution offering a program for school administrators.

9. Each institution will determine if more than one department or division on that campus is offering course work in a given area and if so, it will be studied to see if it should be eliminated.

10. Each institution will submit a report to the Regents and indicate when each of its programs was approved. If no official approval was ever given, a rejustification must be presented to the Regents.

11. More use must be made of the interdisciplinary approach on the campuses and among the campuses.

E. Contd.

12. Each of the campuses should develop a uniqueness and be exceptionally strong in certain areas.

13. Recommendations concerning Nursing, Pharmacy, and Medicine will be made when the Medical School Study is finished.

14. All Ph.D. programs at South Dakota State University, the University of South Dakota and the South Dakota School of Mines & Technology must be rejustified to the Regents and if they cannot be rejustified, they will be dropped. The same thing applies to the Masters programs at Northern State College and Black Hills State College.

15. There should be one College of Engineering in South Dakota.

16. The number of majors in Industrial Arts in the state colleges and universities should be reduced from five to a maximum of two.

17. Only the University of South Dakota should offer a graduate work in special education. Northern State College may continue to offer a major at the undergraduate level.

18. A concentrated effort will be made to reduce the number of courses with low enrollments.

19. Accreditation agencies are more interested in the quality of the programs than in the number of programs.

20. Geographical location is a relatively minor factor to be considered in determining locations of programs.

21. More innovative approaches must be used in higher education.

22. Junior college programs should be provided to those students who wish to use them as a terminal program or as the first two years of a four-year program. They should be confined to the present state college or university campuses.

23. Black Hills State College should be converted to a junior college but if not, its primary role should be that of preparing elementary and secondary teachers.

24. Dakota State College should be closed but if not, it should be made a junior college branch of South Dakota State University. As a third choice alternate, its primary role should be that of the preparation of elementary teachers at the undergraduate level.

25. The primary role of Northern State College should be the preparation of elementary and secondary teachers.

E. Contd.

26. Southern State College should be closed. If it is not closed, it should be a junior college and an outstanding technical college pre-eminent in the Midwest. It should be made a branch of the University of South Dakota.

27. The primary role of the South Dakota School of Mines & Technology should be that of a comprehensive state college for Western South Dakota. If not, its primary role should continue as it is.

28. The role of South Dakota State University should be primarily that of a small land grant institution with primary emphasis in the area of agriculture, science, and applied sciences.

29. The role of the University of South Dakota should be that of a small liberal arts university which would provide programs in the liberal arts and sciences, law, business and school administration.

F. Financial Aids, Scholarships, and Tuition

1. There should be a single state agency to coordinate state student financial assistance programs.

2. Legislature should provide a $100,000 grant-in-aid fund and a $200,000 part-time work fund.

3. The present law concerning the Health Professions Student Loan Program should be expanded.

4. A survey will be made with the intent of combining all present student financial aids into a single statute.

G. Salaries, Fringe Benefits, and Working Conditions

1. Steps must be taken to insure that salaries reach the mid-point nationally within the next five years and earlier if possible.

2. A greatly improved retirement program must be implemented in the very near future.

3. Efforts must be made to see to it that there is adequate office space, clerical assistance, and other faculty support on each campus.

H. Technical and Adult Education

1. A single institution in the state should be designated to offer all technical level training.
2. There should be created a Division of Continuing Education for the state with headquarters in the Regents' Office.

INTRODUCTION

This is a Master Plan for Public Higher Education in the state of South Dakota. It is not a plan designed exclusively for the students, faculty, administration nor for any other specific group. Instead, it is a plan for the people of South Dakota. This plan caters to no special interest group in the state except one -- the citizens. While it does not follow that this plan will be in the best interest of every student, every faculty member or every individual, we feel strongly that it is a plan that is in the best interest of students, faculty, administrators, and others taken as a group.

This plan makes no pretenses at being a cure-all for all of the problems in higher education in South Dakota. Although it is a Master Plan, it ought not be considered to be a "final" plan but instead a plan to be used as a guide and implemented with enough flexibility to make adjustments wherever necessary as time goes by.

Some will be critical of this plan because they believe it falls short of doing what should be done. Others will be critical because they think it goes too far. There is no way to completely avoid these criticisms.

There is a natural hesitancy for the personnel on any one campus to be in favor of losing a program which has been there for a long period of time even though the program may no longer be desirable for the best interest of the state as a whole. This is especially true if it is felt that the savings realized through consolidation might not be available to strengthen that which remains. Mr. Watts Hill, Jr., Chairman, North Carolina State Board of Higher Education, put it succinctly on March 13, 1969, in a panel discussion when he said ". . .the beginning of wisdom is to understand that no head of a public institution can afford to have a true statewide outlook. He understandably has a narrow viewpoint which says, 'What appropriations can I get from the Legislature for my institution?'. If he has to make a choice between what is good for his institution and what is good for the state, he is going to choose what is good for his institution, that's his job.

As a consequence, any agency, whether it is recommendatory or whether it has full governing powers . . . is bound to have a big collision with an institution sooner or later when it tries to assert the statewide interest. I would say it usually comes first with the well-established, long and traditionally well supported and politically strong state university."[1]

---

[1] Underlining mine.

The situation on any given campus is such that the administration is going to be very reluctant to recommend the closing of any programs in view of the great pressures exerted by students, faculty, other administrators, and alumni.

Most of the pressures against the implementation of a Master Plan which suggests some strong changes from what has taken place are of three types:

1. Institutional pressures which have already been mentioned.

2. Alumni pressures. Virtually all institutions of higher education have alumni associations, some of which are extremely influential. While many of the alumni of a given institution can clearly see the need for changes in higher education and are willing to support such changes in the best interests of the state, it is not uncommon that the alumni who are most active in the association are the ones who are least likely to be in favor of changes affecting "their" campus. It is especially true that these alumni are anxious to see "their" institution "grow" -- often in terms of number of students. The number of students is something which is easy to understand and to measure, and if there is strong rivalry among different institutions, the alumni associations quite often are very anxious to see "their institution" achieve greater number of students than the competitor. We think this is an unfortunate measure of the stature of an institution and that a much better measure would be that of quality of the programs.

3. The third kind of pressure comes from the Chambers of Commerce and townspeople in which a college is located. Business firms especially are reluctant to see changes brought about if they have the fear that these changes will result in a decrease in the number of students on the campus. This is an understandable concern. Others in the town see the presence of an institution with a large variety of programs as an asset in attracting new business and industry to that location.

All of the above pressures are natural and not restricted to any one institution in South Dakota nor are they restricted to the state of South Dakota. The point is the interest of the entire state must come first and those of the local community and institution must come second. Those responsible for the implementation of this plan must rise above partisan politics and pressures from special interest groups and see to it that this occurs.

It is recognized that a number of the recommendations may be poorly received by some administrators and faculties on some of the campuses, by some alumni who feel that "their institution" has been seriously hurt, and by some businessmen in certain areas who feel that the recommendations may result in a decreased enrollment for a particular campus and a consequent loss of revenue for their businesses. We regret that we cannot eliminate all of these concerns. To do so would be to dilute the Master Plan and subvert the best interests of the state in favor of a local interest. Having said that, from the very positive standpoint, the implementation of this Master Plan, coupled with adequate support from the Governor and Legislature, will enable higher education to achieve most of the goals it wishes to achieve. We are not inclined to suggest that we can achieve everything we want if the Master Plan is implemented. We think that some priorities have to be set and this the Master Plan does.

METHODOLOGY

The fundamental decision to be made concerning the development of the Academic Master Plan was how to do it. There were basically three alternatives to be considered:

1. The Commissioner and staff would do the research and write the plan.

2. The Commissioner and staff would work with outside consultants and do the plan.

3. The Commissioner and staff would set up a series of committees which would make recommendations to the Commissioner and staff who, in turn, would write a plan.

It was determined rather early that despite the disadvantages of committee work, the most appropriate way to develop the Master Plan in South Dakota would be through a series of committees consisting primarily of faculty members from the state colleges and universities. With this in mind, seven study committees were developed:

A. Admissions, Retentions and Transfers

B. College Enrollments and Building Needs

C. Governing Structure, Number of Institutions, Location and Names

D. Academic Programs and Role of Each Institution

E. Financial Aids and Scholarships

F. Faculty Salaries, Fringe Benefits, and Working Conditions

G. Adult and Technical Education

One staff member from each of the state colleges and universities was appointed by the President of his institution to serve on each of the seven committees. In addition, one or more faculty members from the private colleges and universities were appointed by the President of that institution to serve on each of the committees. Finally, most of the committees had one or more "lay" members serving. Consequently, each of the committees had approximately ten persons in number.

In addition to the seven study committees, four advisory committees were also formed -- Student, Faculty, Presidents, and Citizens. One student from each of the state colleges and universities, selected by his own student association, served on the student committee. One faculty member from each of the state colleges and universities, selected by his faculty association, served on the advisory committee. Each of the state and private college presidents served on the Presidents' Advisory Committee.

A Citizens' Advisory Committee, consisting of 29 members was also created. The Presidents, Regents, and others were asked to suggest names of "lay" people who were interested in higher education for the entire state as opposed to any one institution, people who were highly regarded in their communities, and people who would give of their time to help develop the Academic Master Plan. After the names were submitted, an effort was made to get a true "cross section" of South Dakota. This involved obtaining men and women, people from the various geographical parts of the state, people from the different job occupations, people of both political parties, and other considerations. The Regents of Education approved a list of 29 names in May, 1969, and each of the lay people was then contacted by telephone. All agreed to serve.

The intent was for the seven study committees to meet and develop recommendations which would then be reviewed by the four advisory committees. After the advisory committees had reviewed and commented, the comments would be taken back to the seven study committees so that they could prepare a final report. This final report would then again be considered by each of the advisory committees who would do their own report. All of this would then be taken to the Commissioner to assist him in preparing his own recommendations.

The committees met throughout the period from June, 1969, to November, 1970. Some of the committees found it necessary to meet only four or five times. One of the committees (D) met a total of over 40 days. Some of the committees obtained literally thousands of pages of information to assist in preparing final recommendations. Out of sheer necessity, of course, most of this information is not printed within the Master Plan.

The Regents' staff was able to sit in on many of the seven study committee meetings. We listened carefully to their deliberations and found them very useful. A particularly useful aspect of sitting in on the committee meetings was that in those instances where there was a tendency to "pull punches" in order not to offend someone from another institution, we were aware of this. We were also aware when there was a tendency to offer a "pacifier" to an institution in order to alleviate that institution's discomfort with a recommendation. In those instances where it was felt that the committee substantially "watered down" the recommendations, we have chosen to recommend what we believe the committees would have recommended had they not been fearful of offending someone else. In addition, the Regents' staff sat in on a number of meetings of the Advisory Committees and gained good insight into their feelings. The oral discussions and deliberations were at least as useful as the written reports that followed.

After all the recommendation for the various committees were developed, the staff then faced up to the difficult problem of making its own recommendations for an Academic Master Plan for Public Higher Education to the

Regents of Education. Many thousands of pages of material concerning the Master Plan have been read and reread. Discussions with large numbers of people not directly connected with the development of the Master Plan were held. Reactions to various ideas were gathered from throughout the state. One of the distinct impressions gathered by the Regents' staff is that a large majority of the people of South Dakota have correctly appraised the problems of higher education in this state Without a doubt, the two most common recommendations were: (1) "Close some of the colleges" and (2) "Convert two or three of the present campuses to junior colleges." The third most popular suggestion was to develop a single University of South Dakota with branch campuses. The fourth involved consolidation of programs. One does not have to be a professional educator or directly involved in higher education to see some of the major problems.

The easy solution would be to recommend a Master Plan that called for very few changes from what we now have, to give a "glossy" report of higher education, and to pretend that "everything is just fine". It is likely that some very acceptable arguments could be developed to defend that position. While we think the arguments might be acceptable, we do not think they would be sound and professional integrity will not permit us to recommend such a plan.

REVIEW OF PREVIOUS STUDIES OF HIGHER EDUCATION IN SOUTH DAKOTA

1918 STUDY

The first formal study (of which we are aware) of South Dakota higher education was carried out in 1918 when the U.S. Office of Education carried out a survey. Perhaps the most significant recommendation arising from that study was that there be a consolidation of all of the public institutions of higher education into a single University of South Dakota which would be easily accessible from all parts of the state.

> "The committee believes that the educational and material interests of the state would be served best if a single institution were maintained, that institution comprehending all forms of higher education now provided in the State university, the State college, and the State school of mines. Beyond question this would have been the best policy in the beginning, and the committee is convinced that even now it would be far better to consolidate all three of its degree-granting institutions, abandon the present plants, and establish a new State university centrally located and accessible from all parts of the State. The survey committee accordingly recommends the establishment of a consolidated University of South Dakota."
>
> Source: The Educational System of South Dakota, Washington, D. C., Government Printing Office, 1918, p. 256.

1922 STUDY

A second study concerning the administrative organization of the government of the state of South Dakota was carried out in 1922, and a part of that study was devoted to an analysis of higher education in the state. The study was conducted by the New York Bureau of Municipal Research. It is interesting to note that in the 1922 study, the following comment was made:

> "Log rolling between local legislative delegations wishing to favor their own particular institutions is a common and acknowledged practice and even the heads of the institutions have had a hand in it. It is obvious that no satisfactory plan of institutional location, construction or operation is possible under the present system. The institutional history of South Dakota is full of illustrations of the results of institutional management by the legislative log rolling method. The bad location of the Springfield and Spearfish Normal Schools, the expansion of engineering services

> in three relatively poorly equipped schools instead of the concentration of all engineering education in one well-equipped school, establishment of the School for the Blind in a location absolutely unsuited to this type of service, the establishment of a School of Pharmacy at the State College instead of at the University where it might be affiliated with the School of Medicine are only a few of the bad results of permitting local interests to dominate state policy."[1]

The study went on to say:

> "Lacking proper direction by a higher central authority having the whole state-wide field in view, each institution has carried on quite independently. As might be expected, there is no cooperation between institutional heads and no uniformity of methods of employment, compensation of employees, accounting, record keeping, purchasing or control of property." Further, the study said, "to sum up the situation as regards to the management of institutions in . . . education groups, there is no definite policy of institutional planning or cooperation. The various institutions are engaged in a race of individual expansion without regards to what other institutions are doing or ought to do. As the state grows, unless the institutional development is centrally controlled, the situation is bound to get worse instead of better. An emergency now exists which should be met by prompt action."

The study group's main recommendation with respect to higher education called for abolition of the Board of Regents and The Office of the Superintendent of Public Instruction and the creation by legislative enactment of a Department of Education at the head of which would be a Commissioner of Education appointed by the Governor. An advisory Board of Regents should be created by legislative enactment, its members to be appointed by the Governor to serve without salary. In making this recommendation, the study group suggested that "the Commissioner should be selected because of his professional experience and technical training in the management of educational institutions regardless of his residence. Preferably he should not be a South Dakotan in order that he may not be subject to the local political influences which have been so injurious to educational progress in the past."

1953 STUDY

The next major study of higher education was prepared by Griffenhagen & Associates, consultants in public administration and finance, and was carried out in 1953. This study group made a large number of recommendations, some of which were subsequently implemented but most of which were not. Among other things, the committee made the following comments and/or recommendations:

---

[1] Author's underlining.

1. "A wise provision of the law is that no person may be appointed from a county in which is located any one of the institutions under the control of the Board."

2. "The recruiting of students for any or all state colleges should be confined to South Dakota and not be extended to Iowa, Minnesota, and other states, and that the recruiting of students for the state institutions should be dropped from the control of the separate institutions and be performed by a central information agency for all of them."

3. "The training of superintendents, principals, and supervisors for the public schools should be given mainly at the graduate level and reserved solely for the University."

4. "Graduate study should not be offered by the teachers colleges in their regular sessions because of probably small graduate enrollments at the time of year when teachers engage in teaching duties in the public schools."

5. "The extension class and correspondence study of the state-supported colleges should be placed under central management such as the direction of the Director of Extension at the University."

6. "The geological survey should be transferred from the University to the School of Mines and Technology."

7. "Nursing education should be transferred from the State College to the School of Medicine at the University."

8. "The Division of Pharmacy at the State College should be transferred to the School of Medicine at the University."

9. "The University should discontinue the training of non-vocational teachers of home economics, leaving the training of all vocationa-non-vocational teachers of home economics to State College."

10. "The applied science curriculum of the College of Arts and Science at the University should be discontinued."

11. "The Board of Regents should have a single Executive Officer of its own choosing on whom it can rely for advice as to what policies are needed and for the effectuation of its policies."

12. "There should be established a single consolidated University to consist of all the colleges supported by the state and it should be headed by a single President or Chancellor responsible directly to the Board of Regents. If this recommendation was not to be implemented, it was suggested that the Regents employ an Executive Secretary to study higher education conditions and needs in South Dakota and to make all recommendations to the Board. The Executive Secretary's salary should exceed that of any of the Presidents of the institutions."

13. "These three states (North Dakota, Montana, and New Mexico) and South Dakota do not have a sufficiently large number of college students to warrant the maintenance of 6-8 state colleges."

1960 STUDY

The United States Office of Health, Education and Welfare conducted a study of higher education in South Dakota in 1960. This was a lengthy study and contained a large number of recommendations. Among the more significant recommendations were the following:

1. "That the publicly-controlled institutions be viewed and developed as the South Dakota System of Higher Education, an integrated and coordinated statewide network of institutions supported by the Legislature but responsible to and governed by the Board of Regents of Education and that each individual institution have defined for it an educational role . . .".

2. "That the Board of Regents place a greater reliance for execution of policies on the professional staff in its central office and in the institutions. That the Executive Office of the Regents be strengthened by the addition of three professional staff members."

3. "That the practice of designating individual members of the Regents to serve as institutional representatives or chairmen of the institutional committees be discontinued and the administrative functions thus performed delegated to the Executive Director or the Presidents of the institutions."

4. "That the Regents prepare and present to appropriate executive and legislative agencies of state government a consolidated budget for the operations of the public higher institutions."

5. "That the Regents of Education seek and the Legislature of South Dakota provide adequate funds for the operation of the publicly-supported institutions of higher education at a high level of quality."

6. "That the Regents of Education adopt a policy of keeping student tuition and general fees charged to students who are residents of the state at a level which will maintain its present proportion of support of higher education; as costs rise, the greater absolute amounts should be borne by the state."

7. "That the Board of Regents of Education examine the possibility of consolidating the Departments of Geology at the School of Mines & Technology and the University of South Dakota."

8. "That General Beadle State Teachers College be converted over a 3-4 year period to offer, at the junior and senior years, only programs which prepare elementary school teachers."

9. "That the Executive Director of the Regents, the administrators and faculties of the School of Mines and the State College and the Board of Regents review closely plans for new specialties in engineering in order not to duplicate offerings and costly facilities as new areas of concentration are added."

10. "That the Regents, through the Executive Director, investigate the feasibility of concentrating Nursing programs in a fewer number of institutions."

11. "That beyond the programs made available at all institutions, those in fields of unique specialization and low student demand be provided at certain selected institutions. For example, the vocational-technical education courses at Southern State Teachers College seem to be well established and might conceivably become a major function of the institution."

12. "That the Regents of Education through its Executive Director assume responsibility for coordinating all extension programs except those in agriculture."

13. "That all institutions of higher education in South Dakota try to improve faculty salaries to bring those of all academic ranks and groups of like institutions in line with salaries paid comparable personnel in similar institutions of the North Central region."

14. "That all institutions in South Dakota strive for utmost efficiency in utilizing faculty by reducing small classes and maintaining sound and equitable teaching loads, by continuing to pay close attention to scheduling classes over the days of the week and hours of the day, and by striving for optimum level of utilization of existing space before new facilities are sought; and that savings in funds derived from these practices be turned to increasing the salary category of the operating budgets of the institutions."

15. "That the Regents of Education control small classes in upper division programs of public institutions by adopting policies which will assure that upper division programs will be found only in places where sizable concentrations of students exist and by encouraging and facilitating transfer students to these programs from ohter institutions upon completion of lower division work."

16. "That the Regents establish a standard college yearly calendar among its institutions."

DAVIS STUDY - 1963

The Legislature of South Dakota authorized the Regents to obtain a special consultant to conduct a curricula study of the institutions of higher education in South Dakota in 1963. Among the major recommendations were the following:

1. "It is highly desirable that South Dakota increase gradually the areas in which doctor's degrees are granted and secure accreditation for all degree programs at this level. In addition, it is indicated that advanced graduate work is expensive and should be developed only as funds are available to support them properly."

2. "The School of Mines & Technology and Black Hills Teachers College be combined to form a university."

3. "Southern State College, General Beadle State College, and University of South Dakota be combined to form a single university with three campuses. The three campuses would be operated as though they were on the same site. All teachers of education would be faculty members of the College of Education, etc."

MAX MEYERS STUDY - 1964

In July, 1963, the Board requested each of the seven institutions to prepare a ten-year projection of its needs which was done. A committee was then appointed to study and summarize this material. Dr. Meyers was assigned the responsibility in 1964 of summarizing the information from those sources plus earlier reports. He recommended little in the way of departure from the operation then in existence but did make some suggestions that would result in improved coordination. Among other things, he recommended the appointment of an interinstitutional committee to review the organizations for and provision of special student services. He also recommended the establishment of an interinstitutional committee to consider general extension activities. He further recommended that the executive staff of the Regents' Office be strengthened. He recommended also that an outside library consultant and that a committee of the libraries of the seven institutions survey the library situation.

A fairly clear pattern develops as one reviews the studies. Basically, one could make the following conclusions about the recommendations:

1. That there should have been consolidation of institutions.

2. That there should be a very strong Regents' Office with qualified staff in order to adequately coordinate the activities of the institutions and to insure unnecessary duplication of courses and programs.

3. That there should be program consolidation. A number of studies recommended that Pharmacy, Nursing, and Medicine be combined; and that Geology at USD and SDSM&T be combined.

4. That the Regents should be a policy-making body and devote more of its attention to that and that administration be delegated to the institutional Presidents.

5. That there should be much stronger coordination of extension programs, high school recruiting, and academic programs as well.

SUMMARY

A number of the recommendations of the previous study groups have been implemented. As an example, an Executive Director was employed by the Regents in the 1950's no doubt partly as a result of the Griffenhagen study recommendations. The program in Applied Sciences at the University of South Dakota has been discontinued. The number of Regents was increased from five to seven. A consolidated budget is now requested from the State Legislature. On the other hand, it is almost alarming how a general pattern of recommendations developed and little, if any, action was taken on most of them. Certainly there has been no consolidation of institutions and there has been relatively little consolidation of programs. Further, until just recently, there had been very little coordination of extension programs and high school recruiting activities.

AN ASSESSMENT OF PUBLIC HIGHER EDUCATION IN SOUTH DAKOTA AT THE PRESENT TIME

We believe that the primary problem in public higher education in South Dakota is one of too many colleges and universities.

South Dakota is a state of fewer than 700,000 people but with seven state colleges and universities. This is more state colleges and universities per 100,000 population than all but two or three other states in the nation. Although there is some geographic advantage in having a number of institutions in a state of this size, the development of seven institutions of public higher education is the basis for the primary financial problems of public higher education today. The seven institutions have a current enrollment of something over 20,000 students which represents a very sharp increase in the last 10 and 20 years. Nevertheless, there are signs now that this enrollment will not continue to increase as it has in the past. Of fundamental concern is the fact that the number of taxpayers has been declining at the same time the number of students has dramatically increased. This imposes a continually heavier burden upon the taxpayer.

There are a large number of programs on each campus, many of which have very low enrollments of students and are of questionable quality.

Previous studies of higher education in the state alluded to the proliferation of programs, and the statement is equally true today. There has been a tendency for the institutions to put too much of their budget increases into new programs and too little of it toward improving existing ones. There is a tendency on virtually every campus in all the states to want to add new programs because, for some mistaken reason, it is believed that the number of programs is a measure of the academic stature of the institution. A much better measure of the academic stature is not the number of programs but the quality of programs that are offered. It is no coincidence that the South Dakota School of Mines & Technology, the most highly specialized public institution of higher education in South Dakota, enjoys a very fine reputation throughout the country. It does not have a large number of programs but the programs in existence are of very high quality. This is not to say that there are no programs of similar high quality on the other campuses. But there are far too many programs with very few students, with very few faculty members teaching, and with limited equipment, which result in a mediocre level of instruction.

Partly because of the tendency to want to create additional programs, both at the undergraduate and graduate level, South Dakota has gradually seen its position in higher education slipping the past two decades relative to other states. It is a fact today that salaries in South Dakota are the lowest of any state in the nation, that the budget increase for higher education in South Dakota has been near the bottom in the nation the last five years, that the faculty teaching loads are somewhat higher than the national average and that faculty support in terms of equipment, supplies, and clerical assistance is much lower than it should be. South Dakota ranks 34th in the nation in terms of appropriations for higher education per capita. This compares with North Dakota which ranks 17th, Wyoming which ranks 8th, Montana - 10th, Nebraska - 32nd, and Minnesota - 17th. (Source: M. M. Chambers "Grapevine". Mr. Chambers is a staff member at Illinois State University).

The seven institutions are not going to be able to continue to do what they are now attempting to do and do it well without some fairly basic changes. We would like to see outstanding undergraduate programs, strong graduate programs, good libraries, competitive faculty salaries, adequate faculty support and all the other things that go to make up an outstanding institution. No state is going to provide the dollars to enable all of the colleges and universities to do well all the things they are now trying to do. If this is the case, priorities must be set. That is, which is more important -- undergraduate programs or graduate programs? Faculty salaries or a good library? While we strongly feel that the Legislature is going to have to provide more adequate funding for our state colleges and universities, we also feel that to do well what the institutions are now attempting to do would cost an additional $8 - 10 million per year and from the practical standpoint, we do not believe that the Legislature is going to provide this kind of an increase in our budget. We expect the Legislature to provide additional funding for higher education but many other things we want to achieve in our colleges and universities must be achieved through internal reorganizations and this means among other things consolidation of programs between campuses and within campuses.

The quality of graduates from South Dakota institutions in general has been quite acceptable; the presidents have done an outstanding job of handling the funds made available and the faculty, by and large, are a very dedicated group. Nevertheless, we must now move beyond whatever has happened in the past and determine how to proceed in the future in order to do well that which we are attempting to do. Education must be in a position to change as society needs it and far too often in the past higher education has not been responsive to the public's needs.

CHAPTER I

ADMISSIONS, RETENTION & TRANSFER

General:

American higher education has made a unique contribution in that much of what this country has achieved can be attributed to its rather open admission standards for students. However, the importance of college attendance has been over-emphasized in recent years due to a rather strong tendency for the American people to assume that all high school graduates should secure a college education. This attitude may have been prompted partly by the depression of the 1930's when parents generally vowed that if the depression ever ended, they would make sure that their children would not endure the kind of hardships they had found. One way to assure this was to send the youngsters to college. However, Mr. Logan Wilson, President of the American Council on Education, commented, "Before we proceed further on the assumption that higher education for all is both inevitable and desirable, I think we must take a hard look at present impediments and future alternatives." He indicated that it would be a mistake "for us to opt for college for everybody if this means neglecting other alternatives that might in many instances yield greater individual and societal benefits."

The following three points are emphasized in this report:

1. That a college education should be made available to all students who can benefit from it.
2. That non-collegiate post-high school opportunities should be provided to those students who are not interested in a college education. This would be primarily vocational-technical.
3. That a fairly large number of high school graduates would not benefit from a college education or from a vocational-technical education but could play an effective role in society with no further education. Business and industry recently have tended to consider only college graduates for employment, but there is increasing awareness that they might get some good employees who have no formal education beyond high school.

Society does not require all working people to have a college education. It is possible to overeducate people for jobs. The Carnegie Commission reported in March, 1970, that "We do not believe that each young person should of necessity attend college. Quite the contrary. Many do not want and will not want to attend and it cannot be shown that all young persons will benefit sufficiently from attendance to justify their time and the expense involved. We should resist efforts to create a captive audience in our colleges. We should avoid pressures from family and society which impose college attendance on young people who would not voluntarily choose to attend. We, therefore, oppose universal attendance as a goal of American higher education and believe that non-college alternatives should be made more available, more attractive to young people."

The Commission on Financing Higher Education said in 1952 that "by its very nature higher education cannot be universal. It is not an opportunity owed by society or its citizens nor an obligation all citizens should be asked to assume." It is often argued that even though a college student drops out after a year or two, he is nonetheless better for the college experience. This is debatable, and if the state has only limited funds for public higher education, it is a waste of resources to spend them on a person who has no interest in college and who is, therefore, not going to succeed. A better opportunity might have been available to such a student at a vocational or technical school.

College costs are of two kinds. First are costs for tuition, room, board, and other items of expense incurred while attending college. Second, is the cost for income foregone while attending college. When these are combined the expense of college can be staggering.

The above discussion does not mean that collegiate education should be only for a few academic elite. Collegiate level opportunity should be generally available, but the balance is too heavily in favor of everyone attending college.

It should be further emphasized that with respect to admissions policies, there is no single accurate device which predicts college success. Provision must, therefore, be made for those persons who wish to overcome an inadequate level of preparation so that they may succeed in college. Remidial programs can be of real benefit and they should be made available along with admissions policies which permit all worthy students to use them. Major problems are involved in this, but they are not insurmountable.

Every consideration must be given to a free exchange of students and faculty among State institutions. Indeed, efforts must be made toward exchange among students of this state with those of other states. A good example of such an arrangement is the Committee on Educational Coordination which consists of the Big Ten institutions plus the University of Chicago. This committee operates a traveling scholar program. Its purpose is to permit qualified students to take advantage of special resources available on a campus other than their own. Credit taken at a host institution is accepted and placed on the student's record at his home university. Fees are paid only on the home campus.

Specific Recommendations:

Three policy issues are basic to the assignment given Committee A. Admission and retention are addressed to the twin problems of size and quality desired for each institution. Transfer regulations are designed presumably for the convenience of the student but actually pose policy questions related to institutional attitudes toward curricular integrity.

To establish statewide plans for public higher education, central policy must be developed with a view to statewide implications of institutional regulations. Fortunately the Board of Regents has a long precendent of setting policy in these areas. Now, however, new factors have entered into the situation and new policy must be devised. These new factors are considered in the recommendations here offered. It must be noted, however, that these recommendations are based on institutional roles as defined in staff recommendations for the Master Plan. Any wide variation away from that pattern would make changes necessary.

ADMISSIONS

1. Recruiting should be controlled by offering strong support to the newly created South Dakota Post High School Coordinating Council.

This council includes representatives from every type of formally organized post-high school educational opportunity in South Dakota and from all interested secondary school organizations. It is similar, though more comprehensive, to the councils used in many other states for the same purposes. Functionally, it involves secondary education in the planning for and control of contacts by post-high school educational institutions with high school students. It permits development of the contact function into a guidance activity of the high school and in this way provides a strong device to halt competitive recruiting activity among high school students.

2. Students who rank in the upper two-thirds of their high school graduating class or who achieve satisfactory ACT test scores will be admitted to one of the state colleges and universities. Students not meeting required achievement levels will be admitted to one of the proposed junior college divisions, or they may be admitted to a senior institution on a deferred basis.

This policy will guarantee an opportunity to attempt college to anyone who so desires, but it will place those students with inadequate preparation in institutions where special programming to overcome their deficiencies may be provided. The policy of deferred admissions can maximize facilities use by leveling out enrollments over the school year, thereby avoiding the usual fall semester peak.

3. The presence of some non-resident and foreign students is desirable.

Such students provide a more cosmopolitan social experience on the campus, thus helping to prepare local students for living in what has essentially become a world order. Three considerations are essential parts of a policy for non-resident students:

a. Tuition should be adequate to meet the total cost of instruction so that these students do not become an additional burden on South Dakota taxpayers.

b. Academic admission standards should be high enough to prevent South Dakota from becoming a refuge for the academically unable. Non-residents should be sufficiently able to render a positive contribution to the intellectual and social climate of the campuses.

c. To encourage a broad range of non-resident students, financial assistance should be made available for them.

4. The problem of classification of students as resident or non-resident must be carefully studied. Present policies are difficult to interpret and a new policy must be developed by the Regents.

RETENTION

Institutional autonomy should be observed with regard to retention of students.

Variation of roles among the institutions makes autonomy in retention advisable. Retention or dismissal should be a counseling decision based upon what seems best for the student. Rigid policy here would defeat the counseling function.

TRANSFER

New regulations covering transfer procedures are necessary. Rigidity of present regulations are unsuitable to a coordinated system of public higher education. Policies must reflect concern for the student and for the academic integrity of the institutions. The following recommendations are made:

1. Credit received from any state institution will be fully acceptable at the other state institutions.

Full acceptability implies that any collegiate level work for which credit was granted by one institution will be counted as credit earned on transfer to another institution. This removes the necessity for considering the matter of grades received in the course.

2. A common system of course numbering will be developed.

Common course numbers would greatly ease present difficulties in translating course levels from one institution to another, thereby making much easier the problem of the student in planning a transfer. Achieving fairly common course content at the lower division level would permit much easier and more accurate fit of the transferred program into the receiving institution. All institutions need not be locked together in lower division curriculum, but course titles which meant approximately the same thing would be helpful. This will have special importance if the junior college divisions are established in the state.

3. Procedures will be developed to permit a student with a registration on one campus to take courses on another campus without necessity for transferring or paying additional fees.

Several state schools are geographically close enough to permit commuting between them for occasional courses which might have particular pertinence to an individual program. Some experimentation is already occurring, but typically, the student on one campus must seek admission to the other campus and pay dual registration fees. When the course is completed he must transfer it to his home institution.

CHAPTER II

COLLEGE ENROLLMENTS AND BUILDING NEEDS

Committee B has done much work with respect to enrollment projections and building needs. The number of buildings needed is directly related to the number of students enrolled.

ENROLLMENT PROJECTIONS

According to Committee B's original projections, enrollments in the state colleges and universities will increase by approximately 7,000 in the next 10 years. This would be an increase of approximately 700 per year for our state colleges and universities which is significantly less than recent trends but more than the increase this last year. In arriving at its projections, Committee B used enrollment figures for the five-year period, 1964-1968, and projected trends. They also considered the enrollments for a one-year period, 1968, which resulted in somewhat different figures. A third method was to use an amount just halfway between the five-year trend and the one-year trend. Each institution was given an opportunity to express itself with respect to Committee B's projections and several took exception to Committee B's report in that they, the institution, thought the enrollments would increase on a given campus more than Committee B did. In all such instances, we agree with the committee.

While Committee B has done an extremely good job of projecting enrollments on the basis of the information available, we think that one has to question whether or not a one-year or five-year trend is going to continue and, if not, what direction it will take. Committee B has updated its figures to show the latest five-year trend, that is, 1966-1970, and that is included as an appendix to its report.

The primary factors determining numbers of students in college are:

1. Number of high school graduates
2. College-going rate
3. Retention
4. Migration into and out of the state
5. Post-secondary educational opportunities other than the colleges.

As we look at the factors listed above, we must come to the conclusion that enrollments will increase very slowly if at all the next ten years. The number of high school graduates will decrease during the next ten-year period (See Table I).

TABLE I

Estimated Number of South Dakota Public and Private 12th Grade Graduates 1970-71 through 1979-80*

Year	Number	Year	Number
1970-71	13,088	1975-76	12,646
1971-72	12,948	1976-77	12,362
1972-73	13,149	1977-78	12,493
1973-74	13,180	1978-79	12,320
1974-75	13,237	1979-80	12,240

* Extrapolations and data are taken from statewide study and the Educational Directory of South Dakota Schools, 1969-70.

With other educational opportunities increasingly becoming available (vocational and technical training), we do not think that the college-going rate is going to increase significantly if at all. It is possible that retention rates may be slightly better in the future than they have been in the past and we would hope that this would be the case. With respect to migration into and out of the state, we doubt that there will be any significant departure of the pattern from what has existed in the past.

In summary, we expect college enrollments to increase only modestly during the next ten years.

BUILDING NEEDS

In determining the building needs, standards were adopted so that if it is known how many students will be present, a determination can be made of how much space is going to be needed. To do this, one must know the number of students, square feet of classroom space needed per student, square feet of laboratory space needed per student, office space for faculty members, library space for students, etc. All of these factors were taken into consideration and a determination made of the building needs. There are two major limitations to the report submitted by Committee B on building needs:

1. The quality factor of the buildings has not been well defined. It may very well be that there is ample square footage on a given campus for the projected enrollment but that the quality is such that major renovation is needed. In fact, we think this is the case on a number of campuses.

2. Secondly, while a study may show that there is adequate square footage for classroom space or for laboratory space, it does not clearly show the need for special kinds of buildings. That is, even though a study may show that there is ample square footage on a given campus, a facility such as a new physical education building might nevertheless be needed. In addition to this, an institution might have "adequate" total amounts of space, but not enough for certain specific usages. That is, even though ample classroom space is available, a library might be needed on a given campus. Caution must be used in interpreting findings of Committee B with respect to building needs.

CHAPTER III

GOVERNING STRUCTURE, NUMBER OF INSTITUTIONS, LOCATION & NAMES

GOVERNING STRUCTURE

General:

The basic thrust behind our recommendations on governing structure is to provide the advantages of a single university with branch campuses without its disadvantages. The single university has merit in that it provides for a maximum of coordination of programs and a minimum of unnecessary duplication. Its chief disadvantage is in over-centralization and lack of ability for each branch to achieve an identity. Initiative is somewhat thwarted.

Recommendations:

1. There should continue to be a single governing board for public higher education in South Dakota and it should provide for a professionally trained staff which will provide necessary coordination, efficiency, and information to the Regents to enable them to make wise decisions. The number of additional staff necessary will depend upon Regents' reactions to recommendations from the various study committees. In our opinion, these recommendations are good ones and should be followed.

The state of South Dakota was indeed wise when it provided for the creation of a single governing Board of Regents for the public institutions of higher education in South Dakota. All except three or four states now have provisions for either a single governing board or an overall coordinating board for public higher education. The trend has been increasingly this way and it is merely a matter of time when all states will have either an overall governing board or the coordinating body. The most recent trend has been in the direction of single governing boards. Within the last two years, the various governing boards were abolished in Utah and a single board created. The same thing happened in Maine, West Virginia, and Rhode Island.

The University of California, Center for Research and Development on Higher Education, recently conducted a detailed study of coordination in higher education in four states -- California, Florida, Illinois, and New York. These states were selected for the study due primarily to their fairly long experience with statewide planning. A number of conclusions were drawn but perhaps the most significant was that "on the whole, educational autonomy and the level of performance of colleges and universities have improved as a result of statewide planning and coordination during the period of massive expansion in higher education." In other words, fears that strong centralized coordination will result in reduced autonomy for the institution did not seem to be justified.

There is a popular misconception that centralized coordination results in institutions which are much too similar in nature. This is incorrect. In all states where there has been little if any coordination, the tendency has been for each of the institutions to develop in much the same manner. The differences, where they exist, are almost exclusively in size but not in programs. Close coordination from a central office can assure that there will be a diversity among the various institutions. Each institution can truly achieve its own identity and its own mark of excellence when strong coordination takes place. This coordination insures that not all will be attempting to do the same thing.

A single governing board is not without its disadvantages but its genuine advantages are becoming so obvious that some states have elected to proceed in that route. In some states, a single governing Board might be clearly inappropriate. As an example, it is unlikely that any one Board would have the time or the facilities to govern the huge number of public institutions in a state such as Texas or California. In states with a relatively small population, a single governing board approaches the ideal. The biggest theoretical advantage of a single governing board is that it can properly coordinate the activities of each of the state colleges and universities within the system of higher education. While a single governing board can provide for this, it does not automatically mean that this will happen. It will only happen when and if the single governing board has professional staff which can intelligently analyze requests submitted by the various institutional executive officers.

A second major advantage of a single governing board is that the legislative body does not find itself "bombarded" on all sides by requests from a number of governing boards. This results in a great amount of political backscratching, lobbying, and "trading off".

The main objection to a single governing board is that its work is so demanding that it may not have the time to give adequate attention to some of the fundamental problems of higher education. Too often a single governing board is involved in details of operations of the institutions which provides just that much less time to talk about some of the very fundamental matters which should be of concern to all. The alternatives to a single governing board are:

1. A separate governing board for each institution and no coordinating board.

2. A separate governing board for each institution and an overall coordinating board.

3. A governing board for the state colleges and one for the two universities and the School of Mines with an overall coordinating board.

We think all of these alternatives are less desirable than a single governing board.

There are those who will argue that there should either be no Regents' staff or it should be very small in size. To support their position, they will argue that administrative costs in the Regents' Office will tend to become larger and larger and this will be an inefficiency. While we readily acknowledge that governing boards' central staff can be expensive and they may be "top heavy" (and we have seen some of these), the only measure to be considered is: Will additional money spent in the Regents' Central Office save money for the state overall or will it cost money? It could only be justified if it improves the quality and/or there is a corresponding reduction in cost on the various campuses which are currently providing the services. At the present time, the Regents' staff is, in effect, using staff members on the various campuses to help in the gathering of information. Each of the Presidents is justifiably unhappy on many occasions about the requests made by the Regents' Office for information. In many instances, an additional staff member in the Regents' Office might accomplish what the equivalent of three or four staff members on the various campuses could accomplish in the way of gathering information. In this respect, there should be a substantial savings to the state if there were some increases in the Regents' Office staff.

If it is felt that a professional staff of this scope would not be in the best interest of the state of South Dakota, we recommend that there be one governing board for the state colleges, another governing board for the universities and the School of Mines and an overall coordinating board which would not be involved in any administrative matters but would coordinate only budgets and academic programs. This coordinating board would not get involved in such matters as dormitory design, faculty salaries, or other matters of that nature. It would probably have to meet three or four times a year. Of the two alternatives, we strongly support the former but wish to emphasize that the demands on a single governing board are so very great that an adequate professional staff in the Regents' Office is mandatory to insure coordinated effort which results in the best interests of the state of South Dakota. We are not anxious to develop a large staff but in our opinion if recommendations of the various study committees are adopted, the Regents' staff will have to be increased by a minimum of 2-3 persons in the near future.

2. The Regents should be renamed the Regents of the South Dakota System of Higher Education.

We support Committee C's recommendation for two reasons. First, it emphasizes that we indeed have a system of higher education in the state of which all institutions are a part and secondly, the term "higher education" more clearly defines the role of the Regents than does "Regents of Education".

3. Regents may not be residents of counties in which there are public institutions of higher education.

There are many theoretical arguments in favor of permitting Regents to reside in any county in the state. From the very practical standpoint, we think that Regents should not be appointed if they reside in counties in which there is located a state college or university. It can be argued that one can always appoint a Regent who will rise above local vested interests and speak for the best interests of the entire state. While there are people who can do this, it puts them in an extremely difficult position and it is much easier for a Regent to vote in favor of something contrary to the interests of a given community if he lives 50 miles away than if he lives immediately in that community. Our observation of those instances where Regents are appointed from counties in which there is a state college or university is that without exception, they have had negative results. We think it is erroneous to conclude that large numbers of South Dakota residents are disenfranchised when they are not eligible for appointment to the Board of Regents. This implies that others who are appointed from outside the county cannot adequately represent those people in matters of higher education. We doubt that this is true. Similarly we feel strongly that while a number of people would not be eligible there are still enough people in the remaining part of the state to offer outstanding service while serving as a Regent.

4. Not more than three Regents may be graduates of any public institution of higher education in South Dakota.

While there is every reason to believe that a graduate of one of the institutions may adequately represent others when serving as a Regent, we nevertheless feel there should be a limit on the number who may be graduates of any one South Dakota public institution of higher education because from the practical standpoint, other institutions will wonder if their interests can be adequately represented. It isn't a matter of what actually takes place -- it is a matter of what takes place in the minds of some people and we see no reason why there should not be a restriction placed on the number who do graduate from any one institution and who serve on the Board of Regents.

5. The Regents should continue to be present for institutions' ceremonial events such as commencement but should not designate anyone as an "institutional representative".

The 1960 HEW study recommended against the designation of an "institutional representative". In 1966, at a Regents' meeting a motion was passed which called for the abolishment of this policy. It was reinstated the next meeting. While the intent of the reinstatement of the policy in 1966 was primarily to insure that there be a regential representative present for commencement, etc., on each campus, nevertheless there can be a tendency to believe than an institutional representative is appointed to represent the best interests of a given institution. Although not intended to do so, this policy can provide a tacit encouragement for institutional personnel to bring business matters directly to the attention of their "institutional representative" with the hopes that he can directly assist them in their problems. We favor all Regents getting better acquainted with the problems on each campus and would encourage them to avail themselves of opportunities to learn more of the activities at each institution. We further encourage regential representation at ceremonial campus events. This can be done without designating a Regent as "institutional representative".

6. The School for the Visually Handicapped should become an administrative agency of Northern State College effective July 1, 1972. The School for the Deaf should become an administrative agency of the University of South Dakota effective July 1, 1972.

There have been many discussions about the governance for the School for the Visually Handicapped and School for the Deaf. Suggestions have been made that these two institutions come under the jurisdiction of the Board of Education. At one time, they were under the jurisdiction of the Board of Charities and Corrections. They have been administrative units of the Board of Regents since 1945. Although they are not institutions of higher education, we believe that they function effectively under the Regents of Education. At the present time, Northern State College provides a number of administrative and academic services to the School for the Visually Handicapped. There could be a natural relationship between the special education program at Northern State College and the School for the Visually Handicapped. We believe that the best arrangement would be for the School for the Visually Handicapped to become an administrative agency under the jurisdiction of Northern State College and to be operated by that institution.

The University of South Dakota has a strong program in special education and could work effectively with the School for the Deaf at Sioux Falls. We think that the School for the Deaf should become an administrative unit of the University of South Dakota for the best interests of the state.

7. Committee C recommended that the title of the principal executive officer of the Regents be "Chancellor of Higher Education". This recommendation has been supported by the Presidents' Advisory Committee, Faculty Advisory Committee, Student Advisory Committee, and Citizens' Advisory Committee. We have elected not to make any recommendation with respect to a name change primarily because the recommendation may be misconstrued. The organization chart approved by the Regents in February, 1969, is an appropriate one and the policy on procedure to be followed by the institutions and Commissioner which was approved by the Regents at the same time is also desirable. We believe this arrangement has been working rather well in that it does make possible strong coordination but at the same time enables each of the institutions to retain its identity.

The term "Commissioner of Higher Education" is generally misunderstood. Most people generally associate it with being a political appointment or an elected office such as Commissioner of Public Utilities or Commissioner of School Lands. While this creates no major problems, it does make identification with the academic community much more difficult. In addition, important correspondence at the national level is generally sent to Presidents and Chancellors but not often to Commissioners of Higher Education. It is most important that the Regents' Central Office receive this kind of correspondence.

There is considerable merit in renaming the position (with no change in duties) but if consideration of such a recommendation jeopardizes the balance of the Master Plan, we would not be in favor of it.

8. There should be an advisory council formed for the purpose of coordinating the educational activities of the state.

The council should consist of representatives from the Department of Public Instruction, Division of Vocational Education, private colleges, Regents, legislators, students and the lay community. While the Regents, private colleges, Department of Public Instruction, and Division of Vocational Education are autonomous, there is no doubt that there is an interrelationship in that the programs being developed by one agency certainly have some impact upon the others. There is merit in each of these agencies being autonomous but the long range plans should be carefully coordinated for the best interests of all.

9. All non-parochial post-secondary institutions which offer courses for collegiate credit and which receive state aid will come under the jurisdiction of the Regents of Education.

At the present time, all of the public institutions of higher education come under the jurisdiction of the Regents of Education. If at some time in the future (and we strongly recommend against it) other institutions award college level credit, they should come under the aegis of the Regents of Education in order to assure adequate coordination.

NUMBER OF INSTITUTIONS, LOCATIONS AND NAMES

General:

As previously indicated, the fundamental problem of higher education in South Dakota is having more colleges and universities than can properly be supported by the state. There may have been a time when seven was an appropriate number for South Dakota with limited transportation facilities but it is not appropriate now.

Recommendations:

1. The number of state colleges and universities should be decreased from seven to four. Dakota State College and Southern State College should be closed. Efforts should be made to sell the campuses or put them to some other use. Black Hills State College should become a junior college branch of South Dakota School of Mines & Technology. (See role of each institution.)

There is no doubt in our mind that if we would close two institutions or even three we would save money for the state of South Dakota and improve the quality of education in the long run even if we could not dispose of the present buildings on the campuses. Committee C said, "When divested of emotion, a case for continuing into the future seven four-year institutions offering similar programs is difficult to make, if not impossible."

This recommendation will come as a shock to some, and will be greeted with enthusiasm by many others. A number of people will no doubt believe that while this recommendation should have been heeded in 1950, it is now too late to follow. We are fearful that in 1990 people will wonder why some institutions weren't closed in 1970. It is granted that a more propitious time to have taken this action would have been 20 or 30 years ago when far less was invested in the buildings. One might argue that too much money is now invested on the campuses at Southern State College and Dakota State College to close them. We disagree with this. The total investment on both campuses is approximately $9 million. We estimate that from $1 - $1 1/2 million in operating costs could be saved each year if the students now enrolled on those two campuses enrolled in the remaining institutions. The amount saved each year would soon offset the increase in investment needed on the remaining campuses.

To close the campuses is an implied admission of earlier mistakes. Virtually every well-known company in the United States has at one time or another made major errors. When a business firm finds that it made a mistake, if it is wise it will not continue with the mistake but "cash in its losses" and proceed in a different direction. It is better to admit a mistake and minimize the losses than to continue with a bad decision with further resultant losses.

However painful certain moves might be, certainly there is precedence for them, and once they are implemented, it is never as bad as was suggested. Perhaps the best example of this is when a decision was made several years ago to move the South Dakota School for the Blind from Gary to Aberdeen. There was a great deal of pressure against such a move but now several years later, it is almost unanimously agreed that it was for the long run best interest of the state to make such a move.

One need only to look toward private enterprise where decisions have been made fairly regularly in recent years to abandon an operation. For example, decisions have been made to phase out meat packing plants in South Dakota as well as in a number of other states throughout the country. There was a time when the packing plant was appropriate and was profitable to the company. The fact that this may have been true at one time is no longer justification for it to continue to operate at a loss, and while we grant that higher education is different than private industry, we think that we can learn some things from private industry.

An argument used against closing one or more of the institutions is that it would cost more money because the institutions which would most likely be closed have lower costs per student than does the University of South Dakota or South Dakota State University. This is a misleading argument and one that does not hold water. Either South Dakota State University, the University of South Dakota or Northern State College could easily absorb the additional students at less cost than what is now being paid to operate the campuses which would be closed.

There is a common feeling among the smaller institutions that the larger institutions are getting the lion's share of the money, getting money for expensive programs that could better be used on the smaller campuses and, in fact, siphoning the lifeblood from the small colleges to the larger ones. Conversely, there is a feeling on the larger campuses that there is no reason for the existence of the small campuses, that their operations are relatively inefficient and that if the smaller campuses were simply eliminated, that money could be better spent on the bigger campuses. There may be some truth in both of these.

It is a rather curious fact that one of the institutions which has consistently argued that it is the "most efficiently or second most efficiently operated" at the same time asks for more money for its operations because it is a smaller institution that has certain "fixed" costs such as the expense of a coaching staff, a band, and other expenses which may be almost as large on a smaller campus as a larger one. While this may be a justifiable argument for more funds (and greater costs per student), it may very well also be an argument for institutional consolidation and is certainly an admission that there are certain costs which are somewhat greater accordingly on the small campus than the large one.

We know of no really comprehensive studies done on relative costs of operation of campuses of different sizes. We are familiar with two or three efforts along these lines and on the basis of limited information, it would appear that there are real economies to be achieved as an institution increases in size from 500 to perhaps 2,000. There are additional economies from 2,000 to 5,000 students but the economies are not as dramatic. There is some indication that there may be a leveling off of economies at about the 5,000 - 7,000 student mark (depending upon the type of institution), and somewhat after that point, there may actually be a dis-economy. If, in fact, this is correct, this would be typical of long-run average cost curves for non-educational firms as well. From the practical standpoint, it would appear to us that the efficiency of the three smallest institutions could be dramatically improved with increases in student enrollments, that the per student cost would be somewhat improved at the next two institutions in terms of student enrollments, and that our two largest institutions may be at or approaching optimum size from the efficiency standpoint. Furthermore, speaking strictly from the economics of the situation, this could be used as a powerful argument against a single University of South Dakota which would have more than 20,000 students enrolled. If 5,000 or 6,000 students would be the optimum size campus, this could also be used as a very good argument for having only four institutions of public higher education in the state.

2. (A second choice if Recommendation 1 is not implemented.)

   If it is considered impractical to close any of the campuses, Dakota State College should become a junior college branch of South Dakota State University. Southern State College should become a junior college and technical college branch of the University of South Dakota. (See recommendations for the role of each institution.)

3. There should be a single comprehensive state college for Western South Dakota. The main campus would be at Rapid City with a junior college branch at Spearfish. (See recommendations for role of each institution.)

4. If Southern State College becomes a branch of the University of South Dakota, it should be renamed the University of South Dakota at Springfield. If Dakota State College becomes a branch of South Dakota State University, it should be renamed South Dakota State University at Madison.

ACADEMIC PROGRAMS AND ROLE OF EACH INSTITUTION

GENERAL

The role of each institution must be well defined and followed but necessary flexibility must be built into adjust to changing conditions. As we look at the academic programs and determine which ones should be eliminated, which ones should be consolidated, which ones should be added, we must look well into the future concerning needs and costs. Decisions must not be based on possible savings or expenses in 1971-72 but instead 1980-81.

Following are some general observations:

1. The institutions have done an acceptable job of preparing students considering the amount of funding that has been made available.
2. Far too much money has been spent in adding new programs instead of strengthening existing ones.
3. There are far too many courses of fewer than 10 students.
4. Far too much money has been spent in adding to the graduate programs when this money could have been better spent strengthening the undergraduate programs and adding to the library.
5. There has been a natural tendency for the larger institutions to attempt to duplicate what is being offered at the largest institutions in the country and for the state colleges to attempt to duplicate what the University of South Dakota and South Dakota State University are doing. The exception to this is the highly specialized School of Mines.
6. In order to achieve most of the things we would like to achieve in higher education, two things will be required. First, we must have additional help from the Legislature in terms of dollars and secondly, we must do some consolidation of programs from one campus to the other and within a given campus.

ACADEMIC PROGRAMS

General:

It has often been said that colleges and universities have a threefold purpose -- teaching, research, and service. We agree, but while we would like to think that all are complementary, too often they are competitive. To the extent that they are competitive, we think that first priority has to go to the teaching function and that second priority must then be given to the research and public service function. To this end, one might raise the question, "What is the function of a state college or university?" It is our opinion that many colleges and universities throughout the country have been attempting to be all things to all people and all areas for too long a period of time. We recognize that some feel rather strongly that the colleges have not done what they should and that they are obligated to do more than provide teaching for students. While we think that quite often colleges and universities are uniquely qualified to solve some of the nation's problems, we do not feel that they are the only institutions which are in a position to do this.

General Recommendation 1:

There should be a number of major changes in curriculum on each campus. This should involve consolidation, elimination and, in a few instances, additions.

A major area of concern of the entire Master Plan should be that of curriculum. There has been a tendency to expand programs on all campuses, and this has resulted in some unnecessary duplication which must be eliminated. One only has to look at the list of programs proposed by each of the state institutions for the period extending through 1975-76 in order to register considerable alarm.[1] For example, SDSU proposed 15 additional Master's programs and 11 additional Doctoral programs; USD - 28 additional Master's programs and 14 Doctoral programs; SDSM&T - 3 additional Doctoral programs; NSC - 2 Doctoral programs and 14 Master's programs; BHSC - 1 Doctoral and 10 Master's programs; DSC - 15 Master's programs; and SSC - 1 Master's program. It is recognized, of course, that the institutions were submitting what they would like to have under presumably ideal conditions, but nevertheless, it does provide insight into the kinds of programs which might develop in the absence of strong coordination. If we cannot adequately support the existing graduate programs, it seems imprudent to suggest a rather wholesale increase in them at the same time.

Although it is quite often a painful step to consolidate or eliminate programs, certainly the argument that we shouldn't do such a thing because the programs are of long standing or there has been a tradition or history of this is essentially irrelevant. Academic programs must be subject to constant attention and change. A number of programs and majors have been consolidated and/or dropped on each of the campuses in years gone by. As examples, majors in Foreign Languages, Philosophy, Art, and others have been dropped at Southern in Recent years. A Master of Science in Nuclear Engineering was dropped at SDSM&T in 1967. NSC eliminated programs in Agriculture, Home Economics, and Nursing many years ago. SDSU consolidated Poultry Science and Animal Science as well as Agronomy and Plant Pathology. They also eliminated a program in Aeronautical Engineering and Practical Creamery. A program in Aviation Training was discontinued at BHSC as was one in Home Economics many, many years ago. The Department of Applied Science was eliminated from USD in 1967. This was a residual of an old Engineering program which was given up by the University in 1932. Similarly, a Department of Home Economics was eliminated at USD in 1967. More recently, the Ph.D. program in Zoology was dropped as well as the Ph.D. program in Chemistry. If one wishes to use the argument that history would indicate we should continue with the present programs, we would respond that history would indicate that there has been and should continue to be a provision for necessary changes of programs on each of the campuses.

---

[1] South Dakota Higher Education Facilities Study, 1968.

On October 19, 1970, this office sent a letter to the Presidents asking them to list what they considered to be their #1, #2, and #3 problems since they have been President. Each President listed as his #1 problem lack of operating budget or lack of facilities or lack of funding or something else related directly to the budget. A number of items were listed as the second and third most difficult problems but the second most commonly mentioned problem was inability to make curriculum changes. It is rather interesting to note that, on the one hand, the most critical problem was considered to be lack of funds and on the other hand, another very serious problem was the inability to effect curriculum changes. These two are directly related.

We are very much in favor of some curriculum changes but feel very strongly that all too often curriculum changes really mean additional programs. It would seem to us that if money and curriculum changes are the two major problems on the various campuses, we must then determine how we are going to alleviate these two problems. At the risk of repeating ourselves, we feel rather strongly that one way to alleviate the money problem is to obtain more money from the Legislature and the other is to consolidate academic programs. We favor both.

A study by the Commission on Financing Higher Education, New York, 1952, indicated that perhaps the biggest area for improved efficiency was in curriculum reform. Further the study indicated that "in order to promote their own special competence, professional schools tend to gather within their curriculum all needed courses of study regardless of whether they are provided elsewhere in the university. Some universities, in order to free productive scholars for the research regardless of how important it may be, have permitted them to sever connections with the student body almost entirely. Departments tend to build empires often moving to become professional 'bailiwicks' of their own. Many courses, once started, continue a life of their own until they become knarled branches of the past left unpruned while new branches of learning grow all around them. Curricula changes should occur as a result of deliberate intention rather than from casual growth. Many faculty members and department heads would do well to remember the eupherism of a distinguished British educator, Sir Richard Livingston, who said that a great teacher 'is known by the number of valuable subjects that he declines to teach'."

Dr. Terrill H. Bell, in an address to the Education Commission of the States, on July 10, 1970, (Dr. Bell is acting U.S. Commissioner of Education), indicated "despite obvious complexities and difficulties, nevertheless it seems to me that the times are more propitious today than ever before for actually achieving the reform of our educational system." He want on further to say "in short we understand now that education will not obligingly change for the better only because we want it to change. We understand that educational reform is quite hard work and not simply a golden shower of tax dollars. Education obviously needs all the money it can get. But without a thorough understanding of the problem we seek to solve and a rational plan for putting solutions into effect, we could spend and spend and still find ourselves ten years hence looking back on the 70's with the same sense of puzzled frustration with which we reviewed the 60's."

The Commission on Financing Higher Education, New York, 1952, Columbia University Press, indicated "higher education cannot rightfully appeal for more support without satisfying the public that it is making the most of the resources already available to it. There are dangers in overdoing economy especially in educational institutions. Nonetheless, the present is no time to relax the effort to make educational operations more efficient. We are confident that there is still much to be done on this score."

General Recommendation 2:

All program consolidation or elimination will be carried out over a period of time such that problems inherent therein will be minimized.

Where a program is closed, it may be desirable to do so over a two or three-year time period in order to accommodate students. This will also alleviate possible relocation problems of faculty members.

Specific Recommendations:

1. There should be only one professional school or college of each type in South Dakota. That is, there should only be one professional College of Agriculture, College of Business, College of Education, College of Engineering, College of Nursing, etc.

2. The Master's degree and major in Geology at the University of South Dakota should be suspended and only service courses offered. The State Geological Survey should be moved to Rapid City and be operated in conjunction with the program in Geology at S.D. School of Mines & Technology.

   The programs in Geology are somewhat small and relatively expensive. The depth of the programs would be improved if the two programs were combined. There should be some cost savings in the consolidation but the recommendation is made primarily from the quality standpoint.

3. The University of South Dakota shall be the sole institution offering a program for school administrators. It may be desirable for other institutions to offer some course work in this area in cooperation with the University of South Dakota but the degree will be awarded by the University of South Dakota.

   This has been discussed with the School Superintendents' Executive Committee and with a number of others and is almost unanimously agreed that one institution can easily produce all of the school administrators needed in this state each year. To have more than one institution offering such a program is to dilute the quality and increase the cost. It is true, of course, that some people have to travel further in order to pick up this program but if one has to choose between convenience and quality, he must choose the latter.

4. Each institution will determine if more than one department, division, or college is offering course work in a given area on that campus and if so, will study this carefully to see if its continuance is desirable. A full report will be made to the Regents.

5. A report will be submitted by each institution to the Regents as to when each of its programs was approved. In the event no official approval was ever given, a rejustification must be presented.

6. In the event it is decided that Southern State College is closed, all of the technical education should be transferred to "... a campus which would be designated the technical education center for the state."

7. More use must be made of the interdisciplinary approach on the campuses and among the campuses. There must be very close cooperation between the various departments on a given campus (and perhaps consolidation of departments) and cooperative arrangements will be developed among the various campuses in order to improve the quality of some of the academic programs.

   There is evidence that some departments or divisions on a given campus sometimes make efforts to achieve "autonomy" and to operate independently of others on the campus. This is a very bad trend. While we would like to have staff members of national reputation on each of the campuses in all of the disciplines, we think it unlikely that we are going to be able to do so. Consequently, where the talents of a number of departments can be utilized in developing cooperative programs, this must be done. It might very well be that in some instances no one campus can develop a strong program in a certain area but that by working with one or more other campuses, such a quality program could be developed. While there are always problems of cooperation in such matters, these can be overcome and should be encouraged.

   There will be a "common market" of faculty whereby an outstanding faculty member at institution A may occasionally teach one or more courses at institution B. This might be necessary because institution B may not have a faculty member with similar qualifications in a given area. Similarly, B might have a faculty member who would go to A occasionally to teach courses. Such arrangements will tend to reduce overall costs and improve the quality of programs.

8. We recommend that each campus develop a uniqueness and develop one or more strong programs which will be unique to that campus and perhaps any other in the country. Such programs would be of outstanding quality and would help develop the reputation of the institution.

9. Recommendations concerning Nursing, Pharmacy, and Medicine will be made when the Medical School study is finished.

It should not be concluded that those programs not referred to specifically in this Master Plan are approved once and for all. All academic programs must be subject to continuous review and provision should be made for the addition of new courses and programs if desirable and for the elimination of those if their continuance is not desirable.

For additional recommendations, see narrative for Industrial Arts, Engineering, Special Education and Graduate Programs.

Graduate Programs

Recommendation:

> All Ph.D. programs at South Dakota State University, University of South Dakota and South Dakota School of Mines & Technology and Master's programs at Northern State College and Black Hills State College must be rejustified to the Regents and if they cannot be rejustified, they will be dropped.

At the present time there are 146 Masters programs and 31 doctoral programs in the state college and universities. Ph.D. programs are very expensive often costing from four to ten times as much per semester hour credit as undergraduate programs and while much of the Ph.D. support comes from outside sources, nevertheless a sizable amount of state funds goes into them. With limited financial resources, a decision has to be made as to whether those state funds going into Ph.D. programs are better spent there, at the Master's level, or at the Bachelor's degree level. First priority should be given to undergraduate programs, then Master's programs, and finally Ph.D. programs. We have the feeling that a number of doctorates have been approved because of internal institutional as well as external pressures. It is natural on any campus for the faculty to want graduate programs and to put pressure on the Department Chairman, the Dean and the President for such programs. The Presidents, in turn, make the request to the Regents who have not always been in a good position to evaluate the merits of them. There are far more Ph.D. and Masters programs in existence in South Dakota than can be justified. The supply of Ph.D. holders is much greater than the demand.

According to a report of Dr. Lyman Glenny, the national production of doctorates almost tripled from 1958-1969--from not quite 9,000 to almost 26,000. By 1976-77 the United States Office of Education estimates that 38,700 will be produced per/year--about 13,000 more than in 1969. Dr. Glenny said further that, "In the fall of 1969, reports circulated that only half the new doctorates in physics produced the previous year were employed and that nearly half the unemployed doctorate holders literally besieged the members of the Modern Language Association and American Historical Asoociation at the annual meetings. They wanted jobs. It appears that we have a surplus of doctorates in many fields--a surplus which threatens to go larger and to cover almost all fields in the next year or so."[1]

It is estimated that by 1980 there will be almost 25,000 new doctorates available for teaching but only about 12,000 vacancies, even if we improve the student-faculty ratio. Several prestigious institutions including Harvard and Yale have found in necessary to substantially reduce the number of graduate enrollments. Despite all of this, the pressures on the part of the newly authorized doctorate institutions for additional new programs continues. Similarly, with requests from state colleges for authority to provide advanced degrees. With respect to the economics of the situation, a recent estimate by the National Science Foundation placed total graduate education costs for the nation in 1970 in excess of undergraduate expenditures.[2] Yet the ratio of undergraduate to graduate enrollment is ten to one.[3] The new programs which are frequently small in number are particularly expensive at the graduate level. Allowing for an attrition factor, Dr. Allan Cartter estimates the average cost of science degrees to be approximately $62,000.[4] With this in mind, a decision has to be made of the value to be received by investing dollars in doctoral programs as opposed to investing the same amount of money in some other level of education. The truth of the matter is we are going to have to set priorities between graduate and undergraduate programs.

---

[1] Opening Address, Annual Meeting of the Southern Regional Education Board, June 11, 1970, Houston, Texas.

Dr. Glenny went on to point out that "elimination of a program has traumatic effects. The institution and its faculty work long difficult hours in planning and getting the programs underway even on a limited scale . . . no school really wants to give up a program although an objective view of it might indicate otherwise." Dr. Glenny was critical of some of the Southern states which "as a whole offer a clearcut case . . . in which aspirations of faculty and administrators and political logrolling in the legislatures have created many low quality doctorate programs while also impairing the quality of undergraduate programs."

There is no shortage of Ph.D.s in the country except in a few limited areas nor is there expected to be in the forseeable future. The Carnegie Commission is considering recommending that there be no more than 100 doctoral granting institutions in the country. It is not true that you have to have a Ph.D. program in order to have a viable undergraduate program. To the extent that the programs are complementary, it may be desirable but such is not always the case and far too often they are competitive. There is every evidence that a Ph.D. program quite often detracts from the undergraduate program in that sometimes faculty members involved in the doctoral program are not particularly interested in working with the undergraduate students.

We recognize that in many instances a stong graduate program may be conducive to the development of a quality undergraduate program. Further, it is recognized that it is sometimes easier to attract faculty members if a graduate program is available. Another argument in favor of graduate programs is that their presence is of assistance in attracting federal funds. We think that in far too many instances graduate programs and research are carried out at the expense of the undergraduate programs. Our first concern must be toward undergraduate programs and only after they are satisfactory can graduate programs be fully supported. We further believe that in most instances one can develop outstanding undergraduate programs without any graduate offerings. As proof of this, one can list dozens of quality institutions (usually private) which have only a four-year program.

---

[2] Ann Heiss cites this estimate in her study, Doctoral Education in Prestigious Universities, Center for Research and Development in Higher Education University of California, Berkeley.

[3] Author's underlining.

[4] Reflections on the Cost of Graduate Education, A Paper presented at the Woodshole Conference on the Future of Graduate Education, August, Table I adjusted.

Dr. Lewis B. Mayhew, Professor of Higher Education at Stanford Univeristy, indicated at a meeting at the University of Indiana, "If present plans materialize, there will be a severe oversupply of holders of Ph.D.s and Master's Degrees by 1980." He further indicated that there had been too much emphasis on rapid expansion of graduate training and research. He praised Harvard University's Graduate School of Arts and Science which has announced a plan to reduce graduate enrollment by 20 percent within five years. Dr. Mayhew suggested that other large institutions with a capacity for graduate training do the same. He said further "without heavy involvement in graduate work, college faculties might find the time and information to try to improve undergraduate education. Further it might remove some of the condescension felt toward the simple undergraduate college."

According to a recent article in the Chronicle of Higher Education, a special commission on the job market in modern languages will recommend that no new Ph.D. programs in English or Foreign Languages be established and that enrollments in existing programs be curtailed by the 1971-72 academic year. The Modern Language Association predicted that the number of new full-time positions would decrease 34 percent over the next five years.

Representative Edith Green, from Oregon, in an address before the Education Commission of the States at Denver, Colorado, on Friday, July 10, 1970, indicated that "the last ten years have been a euphoric period of growth -- in enrollments and federal support for research, facilities, student aid, in state subventions in academic salaries -- we are now coming down to earth with a thud. The Bull Market is over, and I see little indication on the federal, state or foundation front to suggest that it will return soon. Like any other industry that has lived for years with 10 percent growth rates and suddenly has to adjust to a more normal 2 percent - 3 percent, we will find it difficult to adapt to this less exhilarating pace. As a result, to carry 'the economic analogy a step farther, our equivalent of capital goods industry -- that is, our graduate schools -- may be entering a long period of overproduction and excess capacity." Further she said, "For too long the educational system and the projection of our real manpower needs have been passing each other arrogantly and blissfully like warships in the night."

Representative Green said further, ". . . I would as readily point the finger at that well-healed clique among educational planners who themselves oriented toward academic degrees and sometimes literally submerged in the 'wonderfulness' of those degrees, seem not to care about manufacturing a surplus of more Ph.D.s and quite honestly, often pay little heed to relevant manpower predictions." She said further, "just as the Federal Government must remain concerned less they become nothing more than sleeping mandarins on a remote and lazy Potomac, the educational community must be aware that they are not ruled by an 'autocrosy of sheepskins', a dictatorship of degree merchants', and thus collapse in all of the hot air of a paper credentials menia."

Finally,a further argument in favor or reducing or not approving additional graduate programs is that not only are they expensive but they require far more in the way of library resources than undergraduate programs.

Engineering

Recommendation:

There should be one College of Engineering in South Dakota.

According to information received from Engineering Education, January, 1970, there was a total of 233,530 undergraduate students and 34,312 graduate students enrolled in Engineering in the United States (not including part-time students). Enrollment in Engineering in South Dakota this last year was somewhat less than 2,000. In somewhat different terms, this means there was one Engineering student for each 335 persons in South Dakota and nationally, the figure is one for each 750 persons. In other words, South Dakota's enrollment in Engineering is substantially more than twice as much per 100,000 as for the country as a whole. Indeed a number of states with substantially more industry and with far more people than South Dakota have the same number or fewer Colleges of Engineering. Iowa has only two Colleges of Engineering and is giving some consideration to closing one of them although no action was taken on this last year when it was considered. Idaho has one College of Engineering with approximately 800 students enrolled. Oregon has one state College of Engineering with about three times the population of South Dakota. Kentucky has two Colleges of Engineering with about 2,000 students enrolled. Illinois has only four times as many Colleges of Engineering with almost 20 times the population. Minnesota has one College of Engineering with several times the population of South Dakota.

The most recent cost information from Illinois shows that Engineering instruction in that state costs more than twice as much as the average of all other disciplines combined. While we do not know the actual cost per credit hour of Engineering in South Dakota, we believe that the relationship between Engineering costs and other costs in South Dakota are not greatly different than those in Illinois. The primary factors to be considered in making a recommendation concerning the number of Colleges of Engineering are as follows:

1. Quality
2. Cost
3. Student Need
4. Demand for engineers in South Dakota
5. Industrial Development
6. Public service to the state of the Colleges of Engineering

1. Quality

Of great importance is the quality of programs at the undergraduate and graduate level. Both of our present Colleges of Engineering are doing acceptable work at the undergraduate level. Graduate programs are barely acceptable at the Master's level and the Ph.D. programs are clearly inadequate. If we are going to have any graduate programs, we think they would be greatly strengthened by a consolidation of the two campuses. There would be much greater depth at the graduate level if the faculties from the two campuses were combined.

A modest program in Agricultural Engineering should be continued at SDSU at the undergraduate level. There are a number of programs in farm mechanization, agriculture mechanization and/or agricultural engineering throughout the country that are not particularly expensive and which do not involve a large number of faculty members. In order to have a really good program in Agricultural Engineering, it would be desirable to have one or more staff members in Civil Engineering and Mechanical Engineering but this would represent a very modest investment. No large scale program in Agricultural Engineering can be justified in that the demand for agricultural engineers is extremely low and the demans for Ph.Ds in Agricultural Engineering is almost non-existent.

2. Cost

There is no question but that any objective economic analysis will indicate that there would be a cost savings by combining the two Colleges of Engineering.

There are no great economies to be achieved at the freshman and sophomore level because most of these classes are already adequate in size. However, classes at the junior and senior level and particularly at the graduate level are small enough so that a number of additional students could be absorbed into any of those with hardly any increase in cost. That is, it takes no more teachers to teach 14 students in the classroom than it does to teach seven. Engineering equipment is expensive and has to be duplicated when there are two Colleges of Engineering. As we look ahead, we know there will be major costs for equipment in the future. Much of the expensive equipment, while absolutely imperative to a good program, is idle much of the time. If the cost of that equipment could be distributed over a much larger number of students, it would improve efficiency of operation. We estimate that the yearly cost savings in operating costs based on today's prices would be on the order of $300,000. (See Appendix A). This is a significant savings to South Dakota. A much greater savings, however, and one that will have to be faced soon as that of building costs. Construction of an engineering physics building on one of the campuses is anticipated for 1971. The other campus has recently asked for an engineering building. The state is going to have to answer the question, "Can we afford two new College of Engineering buildings when one would be quite adequate?". We strongly feel that the state should not make such an investment.

3. Student Need

One College of Engineering can easily meet the needs of the students in South Dakota. While it is true that some students would have to travel a greater distance to obtain their education, the same thing is true for law students, medical students, and students in the College of Agriculture. One school in each of those instances is meeting the needs of the students and while there would be some added convenience to the students if we added another College of Agriculture, Law, Etc., the disadvantages would be far greater than the advantages. One of the arguments used against closing one of the Colleges of Engineering is that it would force some students to go out of state to obtain their Engineering education with the resultant loss of income to South Dakota. While this may be true, on the surface, it is equally true that if we provided training for only 1,500 students in Engineering, there would be money available (saved from the 500 Engineering Students) that might better be spent for the training of students in other areas. In other words, there is some indication that we are training more engineers than we need to in this state and in so doing perhaps forcing students majoring in other areas to go out of state for their education. While we are not recommending a College of Architecture, it is possible that we would be better off with one College of Engineering and take the resultant savings and have a College of Architecture. The students who are now going out of state for that kind of training would no longer have to. We think in such a manner we could meet the needs of the entire state for both engineers and architects whereas today, we are meeting the need of only the engineers. Or put in somewhat different terms, to the extent that engineering is expensive (and it is), it is just that much less money that we have available for the Medical School, the Law School and College of Agriculture, and the various teacher-training programs. In terms of priorities, is it more important to keep two Colleges of Engineering with that much less money for other programs or to have one College of Engineering and free that money for the others? In our opinion, it would be for the long run benefit of the state to have only one College of Engineering and take that money and spend it elsewhere.

It is interesting to note that although South Dakota State University enrolls almost 800 students in Engineering, only about one-sixth of that number graduate each year. Apparently, there is a fairly high attrition somewhere along the way. We are led to believe that a number of students think they want to be engineers but after their sophomore year elect to go into something else. While we are inclined to think there would be fewer total people majoring in Engineering in South Dakota, we do not see this as a problem as there would still be far more than enough graduates to meet the needs of the state. We doubt very seriously that the enrollment at SDSU would drop significantly if it had no College of Engineering. We think that whatever drop there might be in Engineering would be virtually offset the first year by increases in enrollments in other areas. We further think that after three or four years the enrollment at SDSU would be just as high without a College of Engineering as it would be if it continued to have one. If engineering were to be transferred from SDSM&T, the enrollment of that campus could sharply increase with its new role.

4. Needs for Engineers in the State

Clearly one College of Engineering can turn out all the engineers that are needed in the state now and in the foreseeable future. A high percent of the graduates leave the state.

5. Industrial Development

While one might offer as an argument the position that a College of Engineering is invaluable in attracting business and industry into the state, there has been no comprehensive study that we know of which shows that a College of Engineering is of major significance in attracting business and industry. One can certainly cite isolated instances and there is little doubt but that the presence of a College of Engineering at Brookings was one of the factors considered when 3M decided to locate there. Nevertheless, 3M no doubt considered many other things before it took a look at the availability of a College of Engineering. According to our record, 52 new firms have moved to South Dakota in the last two years. Of these, 8 moved to Rapid City and to Brookings where Colleges of Engineering are located. The other 44 went to towns and cities without a College of Engineering. We think the value of the Colleges of Engineering in attracting business and industry is very greatly overrated. For several decades South Dakota had three programs in Engineering and more recently, two without significant industrial development. If two or three Colleges of Engineering were unsuccessful in developing the state industrially in years gone by, we see no reason how why we should expect any major changes. It is our opinion that if industrial development of South Dakota is desirable, it will occur regardless of engineering schools if a real "push" is made in that direction. If such efforts are not made, industrialization will not take place regardless of the number of engineering schools. We believe that one fine College of Engineering is adequate to attract business and industry to South Dakota.

6. Meeting the needs of the State

There is one College of Agriculture which satisfactorily meets the needs of the farmers and ranchers in South Dakota. There is no reason why one College of Engineering cannot do the same thing from the public service standpoint. Although the colleges and universities might have some responsibility to assist new industries to get started in South Dakota, we believe that consulting firms should play the primary role.

For a comprehensive analysis of Engineering, see Appendix A.

INDUSTRIAL ARTS

Recommendation:

There should be two programs in Industrial Arts in the public colleges and universities in South Dakota.

At present, five of our campuses are offering majors in Industrial Arts. We think that in too many instances the programs are not as strong as they should be. We recommend the consolidation of five programs into two for two reasons. First, without a doubt the quality of the programs will be substantially improved. Secondly, there will be a significant cost savings.

Quality:

At the present time, there are 17.25 FTE faculty employed on the five campuses to teach Industrial Arts. There were 86 graduates in 1980 and there were 423 students majoring in Industrial Arts this term. There are a total of 1,275 enrolled for the fall semester, 1970 (See Table A). Industrial Arts is no longer a matter of crafts and leather working. It includes a number of areas among which are graphics, drafting, plastics, electronics and electricity, woods, metals, and crafts. At the present time, the largest program in Industrial Arts has six faculty members and the smallest one, one. We visited each of the campuses which offered Industrial Arts last spring and met with the Industrial Arts people including the Chairman. Each campus except one indicated that a quality program should have at least one staff member in each area of Industrial Arts. They wanted this in order to improve the quality of the programs. However competent the staff member, we see no way for a one or two-man program in Industrial Arts to be a quality program, particularly in the future. As a result, we would like to see a concentration of all of the faculty members who teach Industrial Arts into one or two campuses as opposed to five. This then would give real depth to these two programs. Furthermore, we see no reason why two quality Industrial Arts programs could not graduate as many students as were graduated in 1970 and we also believe they could easily accommodate the number of majors enrolled in the fall of 1970. From the quality standpoint, there should be a very significant improvement if the programs were consolidated.

Costs:

Industrial Arts instruction is expensive. Two studies in another state indicated that the per semester hour cost of Industrial Arts is about 50% greater than the average for other disciplines. Physical plant costs were almost double. Virtually all of the courses are laboratory courses and somewhat limited in size. In addition, a large amount of rather expensive equipment is required to teach Industrial Arts. If the program is to be a quality program, certain pieces of expensive equipment (such as a numerical control machine) should be available for the program. These machines may not be used frequently but nevertheless they are important to have. If there are five quality programs for Industrial Arts, we will need a large amount of expensive equipment which is quite often idle. If we consolidate these programs on two campuses, these pieces of expensive equipment may be reduced from five to two but still be adequate to meet the needs. As an example, the numerical control machine costs anywhere from $25,000 to $100,000. If the average cost is $50,000 and if five are purchased, the cost would be $250,000. If two are purchased, the cost would be $100,000--a savings of $150,000 for one kind of machine. Other examples could be cited.

A further cost savings will be in reducing the number of small classes. A total of 37 courses with ten or fewer students were offered during Fall semester, 1970. While we generally expect relatively small classes in the Industrial Arts labs, nevertheless, we could substantially reduce the number of classes which have only five or six students and instead have them with 10, 12 or 14 students. There is a limit, of course, to how many students a laboratory will hold but quite often the present laboratories are not used to capacity.

It is interesting to note that there are 165 teachers of Industrial Arts in the state and an amount equal to more than 1/2 this number were graduated in the spring of 1970. It has frequently been said that there is a national shortage of Industrial Arts teachers but this certainly is no longer true in South Dakota. To produce more graduates would result in "exporting" more Industrial Arts graduates to other states.

Although we favor only two programs in Industrial Arts, it is recognized that a few courses in this area (primarily crafts) may be desirable on other campuses -- especially for elementary teachers.

TABLE A

STATISTICAL INFORMATION CONCERNING INDUSTRIAL ARTS PROGRAMS IN THE PUBLIC INSTITUTIONS OF HIGHER EDUCATION IN SOUTH DAKOTA

Institution	No. Of Faculty	No. Of Graduates - 1970	No. Of Majors Fall - 1970	No. Of Students Enrolled Fall - 1970
NSC	6	31	145	340
SDSU	1*	11	41	304
BHSC	4.25 **	14	93	220
DSC	2	12	73	173
SSC	4	18	71	238
	17.25	86	423	1,275

* Interdisciplinary -- Other departments provide much of the course work for Industrial Arts majors.

** One has been retired but is still teaching full time.

Special Education

Recommendation:

The only institution which offers graduate work in this area will be the University of South Dakota but all institutions offering teacher training should have some courses in this area. Northern State College may continue to offer a major in special education and Black Hills State College will offer a minor unless it is converted to a junior college.

There is a major unmet demand for people with training in special education. This is a highly specialized kind of work and in most instances, somewhat expensive. Although we think that almost all teachers, particularly those at the elementary level, should have some course work in special education, we do not think it is necessary that all institutions offer a major in this area.

Course Size:

Every effort will be made to greatly reduce the number of courses with low enrollments. The Commissioner of Higher Education will work with the institutions in developing ways to overcome this problem.

There are far too many courses with fewer than five students and with between 5-10 students currently offered on most of our state college and university campuses. There are 456 courses with fewer than 5 students, Fall semester, 1970. Further, there are 534 courses with between 11-20. In other words, we are currently offering almost 1,000 courses on the seven state college and university campuses with ten or fewer students. This is not as bad as it sounds. Many of these courses are one-hour courses which are offered over and above the instructor's normal load. In addition, large percentages of them are music courses where there is a "1 and 1" situation, that is, one instructor for each student in musical instruments. We think over one-half of these small courses can be justified. On the other hand, that still leaves 400-500 courses of very small enrollments but which nevertheless take the time of a teacher.

If approximately 1/2 of the 456 courses of between 1-4 students could be justified, this would mean that approximately 225 classes could be considered for possible savings. If these classes averaged 3 students each, it would mean a total of 675 students and if they were put into courses of 20 students on the average, it would mean a total of 34 classes instead of 225. If we further assume that each of these small classes is taking the equivalent of 1/5 of a full-time instructor, it would mean 46-instructors for these small classes. If they were "doubled up" into classes of 20 each, it would necessitate 34 classes or approximately 11 faculty members. This would be a net savings of 35 FTE faculty members or approximately $350,000 per year. This is to say nothing of the savings which might be achieved by combining some of the small courses which currently have between 5 and 10 students enrolled.

We would propose to eliminate many of these small courses and take the resulting savings and put them to a better use for higher education.

Accreditation:

Some questions have arisen concerning accreditation.

It has always been our thinking that, in general, accreditating associations are more interested in the quality of the programs than in the quantity. Despite all comments to the contrary, both North Central and NCATE are more interested in having a few first-rate programs than a large number of mediocre ones. It is true, of course, that in offering a good well-rounded teacher training program, one must have, of necessity, course work in a number of areas. There is no disputing this. It does not follow, however, that each institution must have a large number of majors in different areas in order to be accreditated or for the accrediting associations to feel they have a strong program. In fact, both of the accrediting associations just mentioned feel rather strongly that a number of institutions have overexpanded and their accreditation would be in much better form if they contracted their operations.

We made a personal visit to the North Central Association offices in Chicago on October 19, 1970, at which time the Executive Director of the North Central Association, Mr. Norman Burns, said, "I'm glad you are considering sharpening the focus" (of higher education in South Dakota). In addition, Mr. Burns went on to say "if you sharpen the focus, the library problems will be somewhat reduced."

In response to an inquiry last year, the National Council for Accreditation of Teacher Education indicated that "it (consolidation of programs) furthers the idea which NCATE has long had that institutions should undertake teaching programs in areas where they have strength and stay out of programs where they do not have strength." They said further that such an effort "is completely in keeping with NCATE policy and the Council members would applaud the efforts of any state to see that only quality and first-rate programs are offered."

Importance of Geography:

One sometimes hears the argument that all programs must be made convenient for students to maximize the number of students who can take advantage of them. In other words it is argued that location is of very great importance. We think that the location factor is not to be completely ignored but that it is far overrated. It is not difficult for any student in South Dakota to travel to the institution furthest away from his home. While we recognize that a number of students have limited financial resources and ideally need to commute to school in order to minimize the cost, we also must point out that a very large number of students are currently attending institutions more than 100 miles from home and in some instances, 300, and this seems to be no great impediment to them inasmuch as they frequently return to their homes for weekends. Geography is of much less importance today than it was 25 or 50 years ago. While it is true that we could probably increase the number of students attending college if we increased the number of colleges and the number of programs in each, one finally has to strike a balance between convenience and cost. The presence of 7 institutions is leaning too heavily in the direction of convenience. If we had unlimited financial resources, we would be in favor of each of the institutions being a very comprehensive institution with virtually all the majors in existence. We have heard no one argue that we need more than one Law School, more than one School of Agriculture more than one School of Business, or more than one School of Medicine. Yet if one carried the location argument to an extreme, he would argue that we should have all of these on each of the campuses. If we really believe 100% in the location factor, we would have to add a large number of colleges and universities in other parts of the state for the benefit of those students who are more than 50 miles from one of our campuses. Obviously, the cost would be prohibitive. We believe that the geography argument is of minimum importance and should not be used to justify a large number of high cost programs on each of the campuses.

As Dr. Davis said in his 1963 study, "for it is better to have a good quality education at some distance than a poor education next door".

Innovations and Experimental Programs:

The surface has barely been scratched with respect to innovations and experimental programs in South Dakota. This is not to say that we should be the first one to accept new ideas or subscribe to some new policy that has not been proven. Nevertheless, we are concerned that much of what we are doing today is essentially the same thing as was being done 20, 40 or 50 years ago. It is a common practice to have an academic year of nine months, a school week of five days, and an academic load of approximately 16 hours per semester. The student comes into the classroom, takes his seat and receives a lecture or participates in some kind of a discussion. Little of this has changed in the last century. We require approximately 120 semester hours except in certain fields for a Bachelor's degree. We impose certain maximum figures in terms of credit hours for which a student may enroll in a given semester. While we are not suggesting that this be done, we wonder why we require 120 semester hours to graduate. Isn't it quite likely that this could be done in 90 hours or 60 hours or perhaps it would take 150? We think we have been much too rigid with respect to the number of credit hours which a student may take in any one semester and that student differences are such that some students could easily take 25 semester hours and others, perhaps not more than ten. Yet we find very few differences of this magnitude in terms of the course loads.

Far too little consideration has been given to individual student differences. Some students with strong high school academic backgrounds should be able to graduate from college in two years; others might take 3, 4, or even 5. Additional opportunities must be provided for students to challenge courses and receive credit for them. In many instances, course work taken in college is largely a duplication of course work taken in some of the good high schools. Far more flexibility must be provided the student in setting up his academic program. (This is not to say that students should determine their own programs.) We must begin thinking in terms of a 12-month academic year instead of a 9-month year. This will result in better utilization of the facilities and staff and will also reduce the period of time necessary for a student to graduate. If other ways can be found to reduce the period of time necessary to receive a degree, it will save the state of South Dakota a substantial amount of money. We note with interest that the Carnegie Commission is now suggesting a three-year Bachelor of Science program instead of a four-year program.

Each institution will make every effort to see to it that high school graduates may challenge courses and take proficiency exams in order to obtain a maximum of credit without taking the courses on the campus.

In addition, we think we should have some innovative experimental programs to test new ideas and it is quite likely that Federal funding might be available for such programs.

Junior Colleges:

Much has been said about junior colleges in recent years. It has been stated that junior colleges are being added at the rate of one per week. The first phase of the Master Plan in Illinois provided for the creation of a large number of junior colleges in Illinois. In addition, junior college movements have been popular in virtually all of the states in the nation. The chief advantages of the junior college concept are: (1) many of them are commuting colleges and the students who attend reside with their parents but are within easy commuting distance thereby reducing the cost, (2) junior colleges provide a concept of education that may not be present in the four-year institutions. Many of them provide programs in the vocational areas and are considered to be terminal programs. We think there is a definite need for this kind of training for students throughout the country.

While we strongly favor the junior college concept and are in support of it in most of the states, it by no means follows that since other states have done it, we should in South Dakota. South Dakota is unique in being large geographically but very low in population. At the time Illinois developed its junior college concept in 1964, it had only six state colleges and universities for a population of well over ten million. Without a doubt junior colleges are indeed highly desirable in the heavily populated areas. It does not follow that junior colleges are desirable in every state. There is the painful matter of financing them and insuring their quality. Of those in Illinois, the smallest junior college district has a population base of almost 50,000 people. That district has had considerable difficulty because of its low population base. It is felt in that state as well as many others that a first-rate program in the junior colleges requires no fewer than 1,000 students after 3 or 4 years of operations. Few, if any, communities in South Dakota can provide that many students for the junior college program other than those communities which already have private or public colleges.

Nevertheless, we think there is real merit in the concept of the junior colleges and that separate and distinct junior college programs should be provided on a number of our state college campuses where facilities are already available. We would not see these only as the first two years of senior college but as providing unique programs for those students who may not wish to take the 3rd and 4th year of college. We suggest that there be immediately created a distinct junior college program on the existing state college campuses. We would further see the development of junior colleges separate from the existing campuses as additional unnecessary duplication and an attendant loss of quality of the junior college programs as recommended for the state colleges.

ROLE OF EACH INSTITUTION

We recommend the following roles for each institution:

BLACK HILLS STATE COLLEGE:

Black Hills State College should be converted to a junior college branch of South Dakota School of Mines & Technology.

As a second choice alternate, its primary role should be the preparation of elementary and secondary teachers and a secondary role would be to offer pre-professional, one and two-year terminal, and junior college programs, the latter to be considered for BHSC within the next two or three years. If the second choice is selected, the degrees authorized should be the Associate Degree, the Bachelor of Science in Education, and the Bachelor of Science Degree. BHSC should have a liberal arts program only in support of the primary role. A Master's degree would be offered by BHSC only if it can be rejustified to the Regents.

DAKOTA STATE COLLEGE:

Dakota State College should be closed. (See earlier discussion)

As a second choice alternate, the primary role should be that of a junior college branch of South Dakota State University.

As a third choice alternate, the primary role should be the preparation of elementary teachers at the undergraduate level and also the preparation of secondary teachers in limited areas. In addition, DSC should offer pre-professional, two-year terminal and junior college programs, the latter to be considered within two or three years. The Associate Degree should be authorized if DSC becomes a junior college. If it is not so converted, DSC should offer the Bachelor of Science in Education, the Bachelor of Science and the Associate Degree. (See previous discussion on Number of Institutions for reasons for closing.)

> Dakota State College is ideally located for a junior college. Its present enrollment is approximately 1,300 and although it graduates a fairly large number of teachers, nevertheless, many of the class sizes are somewhat small, especially at the junior and senior level resulting in somewhat expensive course offerings. The cost would be substantially reduced if DSC were converted to a junior college with an attendant reduction in the number of classes of very small size. Further if this were to happen and if DSC served as a "feeder" institution to the larger institutions, it would similarly reduce the number of smaller classes on the larger campuses at the junior and senior levels.

DAKOTA STATE COLLEGE: (Contd.)

The number of students at DSC need not be reduced if this recommendation is implemented.

There is presently no shortage of teachers in South Dakota or elsewhere in the country nor is it anticipated that there will be in the foreseeable future. The other campuses in South Dakota can easily turn out the required numbers of teachers in the various areas.

NORTHERN STATE COLLEGE:

The primary role of Northern State College should be the preparation of elementary and secondary teachers. NSC should also offer pre-professional, two-year terminal and a junior college program, the latter to be considered within two or three years. Degrees offered should be the Bachelor of Science in Education, the Bachelor of Science, the Bachelor of Arts and Associate Degree. Graduate work at NSC if justified should be in cooperation with the University of South Dakota. Master's degrees may be authorized only if rejustified to the Regents.

The "metamorphosis" of state colleges is fairly common throughout the country. The pattern is generally one whereby they started as "normal" schools, then had a name change to state teachers college and then had the name changed to state college with the "teachers" being dropped. The last step, of course, is to change the name from state college to state university! We have some reservations about the trend the last 20 years nationally to change the name from teachers college to state colleges. Our reservations come about primarily because of the feeling that as the name is changed to state college, the emphasis is also changed and teacher training becomes less and less important and, in many instances, becomes the stepchild. Although we have not yet seen this happen clearly in South Dakota, we have observed it in other states and think it is not impossible for there to be strong pressures to do the same thing in this state. Normally, arguments are advanced for programs in the arts and sciences because they strengthen the teacher training program. To the extent this is true, we are in full support of it. Although this is the primary argument actually given, we are sometimes inclined to believe that the real argument is another matter. In far too many instances, liberal arts programs on the teachers college campuses are developed not primarily to support the teacher training program but as entities in and of themselves. We are familiar with the argument in South Dakota that "not all students when they are juniors and seniors are going to develop into good teacher material. If we find out when they are seniors that they are not going to be good teachers, we need to give them some kind of an 'escape valve' and therefore, we need a major in the arts and sciences. That is, we need a program whereby the student may graduate in non-teacher training." The escape valve gets larger and larger. Normally, the percentages of graduates in the teacher training program then starts declining to where, in some instances, (not yet in South Dakota) there are far fewer people graduating in the teacher education program than in the others. We think this is a bad trend.

We feel that the state colleges should offer a fairly limited number of majors and minors but that those offered have considerable depth and be high quality programs.

SOUTHERN STATE COLLEGE:

Southern State College should be closed. (See earlier discussions.)

The state would save money if SSC were closed. The National Council for Accreditation of Teacher Education has indicated that the accreditation of SSC is in serious jeopardy. A decision must be made whether to put substantially more money into the program so that they can continue to be accredited, to close the institution or to change its role.

If SSC is not closed, its role should be that of an outstanding technical college as well as provide a junior college program. It should become a branch of the University of South Dakota. Committee D, at one time, recommended that if the role of SSC was not changed, it should be closed.

Of all the recommendations concerning academic programs and role of each institution by far the easiest one to make is that concerning SSC. It is obvious to almost everyone who has visited SSC and studied their programs that the role of SSC must be changed. For far too long, SSC has been the stepchild in public higher education in South Dakota. Its role should be changed from primarily a teacher training college with its present image to that of a really outstanding technical college unsurpassed by any other in the midwest. This is the one area where SSC can carve out a place for itself in higher education in South Dakota. There is a great need for this kind of institution in South Dakota and the enrollment should increase rather rapidly in the next few years.

If it is not closed, degrees offered should be Bachelor of Technology and Associate Degree. Programs in secondary and elementary education should be discontinued at SSC. Southern has furnished the south central part of the state with a large number of teachers in years gone by. There is no question, however, but that the other institutions can easily meet the needs for teachers in South Dakota for the foreseeable future. We think that SSC can establish an outstanding reputation in the technical area and it is an area where there is a great need and far too few training areas. At the present time, the North Dakota School of Science at Wahpeton has 117 students enrolled from South Dakota. That institution's enrollment has increased from 1,086 in 1960 to 2,884 today despite the fact that it does not have a teacher training program. While there is no shortage of teachers at the present time, there is a great shortage of technicians. Far too much emphasis has been placed upon the merits of attending a four-year college when, in fact, many young people do not want to attend a four-year college and can find something much more to their liking at a technical institute.

President Nixon indicated in his higher education message in March, 1970, that "a traditional four-year college program is not suited to everyone. We should come to realize that a traditional diploma is not the exclusive symbol of an educated human being and that 'education' can be defined only in terms of the fulfillment, the enrichment, and the wisdom that it brings to an individual. Our young people are not sheep to be regimented by the need for a certain type of status-bearing sheepskin." He said further "two-year community colleges and technical institutes hold great promise for giving the kind of education which leads to good jobs and also fulfilling national shortages and critical skill occupations. At the same time, critical manpower shortages exist in the United States in many skilled occupational fields such as police and fire science and environmental technology and medical paraprofessionals."

Mr. Wade Martin, State Director of Technical Education in South Carolina, recently said, "How can we continue to graduate students in the fields which don't need workers? A student suffers. The pay scales in his field are downgraded because of the surplus of labor -- and the only ones that are benefiting are the schools which continue to accept student fees. . . and lead them into a dead-end career." With respect to the need for vocational-technical programs, John Gardner, former Secretary of HEW said, ". . .we must learn to honor excellence (indeed demand it) in every socially accepted human activity and to scorn shoddiness, however exulted the activity. An excellent plumber is instantly more admirable than an incompetent philosopher. The society which scorns excellence in plumbing because plumbing is a humble activity and tolerates shoddiness in philosophy because it is an exulted activity will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water."

SSC would be pre-eminent, in this respect, in the entire Midwest. We must question the wisdom of SSC continuing to train elementary and secondary teachers, particularly in certain areas. Their staff is very limited in most areas as are the facilities and the equipment. With some exception, the programs at SSC have far too little "depth" with respect to the number of faculty members. We hasten to say that this is in no way intended to reflect unfavorably upon the qualifications of the faculty members who are at SSC nor upon the many students who have achieved enviable records after graduation. We feel strongly, however, that the programs in chemistry, mathematics, biology, or physics with only one or two faculty members are unlikely to be quality programs. There are a number of such programs in existence at Southern. In this respect, the latest NCATE accreditation report for SSC criticized the institution for having faculty members teach in areas other than which they had been prepared.

For the next two years or three years, SSC should be the only state college with a distinct and separate junior college division. Implementation of this role for SSC would not result in a decreased enrollment. The enrollment would increase in a short period of time and should reach 1500-2000 students within six years' time. Further, there would be little relocation of faculty involved because most of the subjects, other than professional education, would continue to be taught -- for the technical institute or the junior college. The junior college program would be of two types -- terminal for those not interested in a four-year college program and transfer for those who wish to continue.

SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY:

The role of SDSM&T should be that of a comprehensive state college for Western South Dakota. Its main campus should be in Rapid City with a junior college branch at Spearfish. Engineering would be transferred to SDSU.

There is merit in a comprehensive state college for Western South Dakota and Rapid City is the logical location for such an institution. It would be primarily a teacher training institution but also would have a significant program in liberal arts and sciences. We would estimate the enrollment at the main campus and at the branch campus to be 5,000 within three years of implementation of this recommendation. There is little justification for two four-year campuses as close together as those at Rapid City and Spearfish. If there is to be only one four-year campus, Rapid City is the more logical location.

As an alternate, the role of SDSM&T should remain relatively unchanged. It should continue to be an outstanding college primarily for the training of engineers and science majors. Some liberal arts programs will be necessary but only to support the major role. If this alternate is accepted, SDSM&T should have the responsibility for the College of Engineering. Degrees offered should be the Bachelor of Science, Master of Science and Doctor of Philosophy if rejustified.

SOUTH DAKOTA STATE UNIVERSITY:

The role of SDSU should be primarily that of a small, land grant institution with primary emphasis in the area of agriculture, science, and applied sciences. An additional role of SDSU will be to operate the agricultural experiment station and the cooperative extension service.

If the recommended role for SDSM&T is accepted, SDSU should have responsibility for the College of Engineering in South Dakota. If the suggested alternative is accepted for SDSM&T, SDSU should have a program in Agricultural Engineering. The degrees authorized should be the Bachelor of Science Degree, Bachelor of Arts, Master of Science, Master of Arts, Associate and if rejustified, Doctor of Philosophy.

UNIVERSITY OF SOUTH DAKOTA:

The role of USD should be that of a small liberal arts university. This would provide programs in the liberal arts, fine arts and sciences, at present undergraduate levels and a program in law, a school of business, and the training of all graduate students in school administration. Degrees authorized should be the B.A., B.S., B.S.A., Bachelor of Medicine, M.A., M.S., M.B.A., Specialist in Education, Associate, Ed.D. and if rejustified, Doctor of Philosophy. The University should have the primary responsibility for special education curriculum and should also be the primary center for training in library science.

CHAPTER V

FINANCIAL AID, SCHOLARSHIPS AND TUITION

General:

Continually rising costs of post high school education and training of all sorts has made it increasingly difficult for students and their families to bear the financial burden unassisted. As a natural consequence, financial assistance programs have been developed at institutional, state and federal levels all over America, with particular emphasis over the past ten years.

Traditionally, financial assistance to students was of two types. First there were privately funded scholarships designed as rewards for high academic achievement either in high school or at the college level. These awards were used to attract high level students to particular institutions and were usually made without reference to financial need. A second type of financial assistance was the emergency loan. This was a small amount of money set up in a special account, usually in the institutional business office, to be allocated to students who had sudden unexpected and minor financial crises.

Enrollment losses experienced by higher education in the depression 30's made possible some state funding of student financial aid based at least partly on financial need. Typically, however, these funds were only available to top flight students in fully accredited four-year colleges and universities.

Federal government participation began with the GI bill of post World War II, and the beginning of federally sponsored and supported university and college located research. In both areas financing was regarded as earned, therefore, again, there was no consideration given to financial need of recipients.

The shortage of elementary teachers created by the war's baby boom brought federal assistance in the form of the National Defense Student Loan Program which provided loans for students in occupational areas thought closely related to long term national defense. Elementary teachers, engineers and scientists received preferential status originally, although that changed until today all students are eligible. Demand for these funds led to establishment of a requirement for demonstration of financial need. Once this occurred at the federal level, other levels and sources of student financial assistance quickly adopted the same philosophy until at present only very minor scholarship amounts are available without evidence of need.

Solid academic achievement remained a prerequisite to all forms of financial assistance until 1965-66 when pressure for providing educational opportunity for disadvantaged elements of our population forced a change of position, first at the federal level but now extended down to include institutional funds. At present for almost all federal and state student financial aid the rule is that so long as a student is retained in an institution his financial assistance continues regardless of academic results achieved.

The impact of this new philosophy has forced massive additional amounts of financing at all levels for student financial assistance, with most of this coming from the federal government. However, most states have now also provided substantial state programs.

Currently in South Dakota our public and private institutions receive federal aid in the form of National Defense Student Loans, Educational Opportunity Grants and College Work-Study. From the state our private institutions receive no assistance, but certain classes of students in public institutions do have tuition waivers available. These include veterans, orphans of veterans, blind persons and a limited number of Indians. The state also funds a Health Profession Student Loan Program for the benefit of students who must leave the state to attend professional school. At the institutional level each school has certain contributed funds available as loans, grants, scholarships or part time wages. Finally, there is another class of loans which does not require evidence of financial need, but which is probably the largest single source of financial assistance. This is the Federally Insured Loan Program under which the student borrows the money he wants from his local bank and the Federal government guarantees the repayment, in effect going on the student's note. There is also a partial interest subsidy available under certain circumstances. This program has replaced in South Dakota earlier use of what is known as the United Student Aid Fund which worked the same way as the present program but which required the state to put up matching funds for the federal guarantee. Under the present arrangement, that is not necessary.

The growing availability of all this funding has developed a need for a new kind of administrator, the Director of Financial Aid. He is basically trained in counseling and usually operates as a function of the Dean of Students' Office. Ideally, his function is completely divorced from the Business Office, and ideally, he has no responsibility in the field of collections. His procedures are based upon what has become known as the "packaging" approach. The idea here is that no student works his entire way through school unless he wants to and no student gets a free education. The financial aid officer puts together for each student a "package" of assistance consisting of some combination of two or more elements of loan, grant, and job. Very financially poor students usually get less loan money and a larger proportion of grant to reduce their debts on graduation. Highly academic students tend to work more because they can spare the time. Financial assistance is thereby individualized.

Assessing unmet student financial need in South Dakota is difficult. There is no record of the number of students who do not attempt higher education simply because they do not believe they can finance it. High school administrators and guidance personnel, however, believe the number to be substantial. Approximately 60% of South Dakota high school graduates continue in some kind of post high school education. Certainly among the remaining 40% must be a large group of young people who fail to continue for economic reasons.

Recommendations:

1. South Dakota should create a single state agency to coordinate a state student financial assistance program.

   a. Across the country the pattern of increasing state aid is growing rapidly. South Dakota is not likely to avoid it. With state aid comes the problem of equitable distribution among legitimate institutional claimants, including the public colleges and universities, the public vocational schools, and possibly the private collegiate and vocational schools. If all forms of post high school education are valid and needed, all students should have the same claim to any tax supported assistance. If the aid is authorized on such a broad basis a separate agency should be established to administer it. This is far preferable to several agencies.

   b. Private higher education interests submitted a bill to the 1970 Legislative session to create a separate control agency and to provide it with assistance funding.

   c. Creation of a separate student financial aid agency, however, should wait upon prior legislation providing more state assistance than is now available. State aid presently is limited to the four-year, degree granting public colleges and universities. For this, present arrangements are adequate.

2. Two new programs of student financial assistance should be created and funded by the Legislature. These are a $100,000 grant-in-aid fund and a $200,000 part-time work and state Work-Study Program.

   a. Grants-in-aid

      (1) Institutional financial aid officers agree that state aid funds are critically inadequate to meet the barest needs of their students.

      (2) Grant-in-aid funds are recommended rather than loan funds because under the National Defense Education Loan Act and the Federally Insured Loan Program substantial loan money is already available. If only loan funds are available, however, the most economically disadvantaged students graduate with the heaviest loan burdens. To balance out this inequity, grant funds should be made available to those least able to pay. A state program would help support the sadly underfunded Federal Education Opportunity Grant Program. It would operate in substantially the same way as the Federal Program.

   b. State Work-Study

      (1) Substantial increases in part-time student work budgets for the institutions should be funded, and this should be of two kinds.

(b) A limited funding available to institutions for students who want to work, but are not poor enough to qualify for Federal Work-Study;

(c) A back-up to the Federal program for the benfit of those who must work to attend school but for whom sufficient Federal assistance is available.

(2) State Work-Study funds should be apportioned among the institutions just as the Federal program money is in same ratio of 80% state and 20% institutional match, and the program should be administered by institutional financial aid officers as an adjunct resource for packaging student assistance.

TABLE 1

WORK STUDY
Fiscal Year 1970*

	Federal Expenditure	Institution's Matching Expenditure	Total
SDSU	$164,534	$ 41,133	$205,667
USD	124,102	31,025	155,127
SDSM&T	71,589	17,897	89,486
NSC	50,668	12,667	63,335
BHSC	127,889	31,972	159,861
DSC	63,470	15,867	79,337
SSC	15,722	3,930	19,652
Total	$617,974	$154,491	$772,465

*Source: Institutional records

This table indicates clearly how helpful the Federal Work-Study program is: $154,491 in state money becomes $772,465 in student wages and in work accomplished on the campuses. The state program proposed would all be state money, of course, but if a substantial portion of the part time work funds in institutional budgets were appropriated to the Regents' Office for pro-rata distribution to the institutions through their offices of financial aid, maximum student aid could be achieved, because they would be used in packaging to students' exact needs.

        (a) The availability of part-time enables a student to avoid heavy debt and is therefore more attractive as financial aid than is a loan.

        (b) Student part-time help, particularly that funded under Federal Work-Study, makes a significant and much less expensive source of labor available to the institution than full-time regular staff.

3. The present law establishing the Health Profession Student Loan program should be broadened to include other professions for which a student must leave the state to obtain training.

    a. The present law is open to a charge of class legislation.

    b. It can only be justified by assuming that the health professions are more valuable to the society than others; an assumption difficult of proof.

    c. Architecture would be one added field but at the undergraduate level.

4. Present Board of Regents policy regarding residence for tuition purposes should be redrafted on a firm legal footing. (See recommendation on this point in staff report covering Committee "A").

5. Substantial increases are recommended for funding higher paid graduate assistantships.

    a. We contemplate substantial limitation of graduate work, but in departments of schools where such work will still be authorized, much of the routine burden of the undergraduate department can be assumed by graduate students at less cost than by regular faculty.

    b. The graduate assistant is actually working part-time to finance his education. This is a better device for him financially, and it better serves the institution than do other forms of student financial assistance. Higher paying stipends would provide superior applicants and improved benefit to the institution.

6. A survey will be made by the Office of the Commissioner with the eventual intent of combining all present student financial aid at the state level into a single statute.

    a. Such a redrafting would permit much easier understanding of what kinds and amounts of aid are now available, thereby easing examination and reference problems.

    b. This would be a necessary preliminary step to drafting a statute creating a single state agency for the administration of state aid.

    C. Hopefully, such a statute could be submitted to the 1971 session of the State Legislature.

CHAPTER VI

SALARIES, FRINGE BENEFITS AND WORKING CONDITIONS

GENERAL

We are in strong support of the major recommendations of Committee F:

(1) that a strong effort be made to raise the compensation and salaries of the staffs of public institutions of higher education in South Dakota to a level approximating the national average over a five-year period. To accomplish this will require substantial increases each year, as indicated on page sixteen of that report.

(2) that as part of this increased compensation, a comprehensive program of fringe benefits should be introduced, this program to be given precedence over salary adjustments if necessary.

(3) that more attention be given to the improvement of working conditions to ensure the most effective use of the staffs at the state colleges and universities.

Their study is well done and well documented.

SALARIES

There is no question that by any yardstick faculty salaries have been and are extremely low in South Dakota, now ranking 50th in the nation. It is difficult to see how we can attract and/or retain outstanding faculty members with our present competitive position on salaries. We recognize that costs of living may be somewhat lower in certain areas of South Dakota than some of the bigger cities on the East and West Coast and further that there may be other advantages in living in this state. It is quite likely that once we recruit a good faculty member to South Dakota, we can perhaps pay somewhat less than a competitive salary and still keep him. Nevertheless, there is a definite limit to the kind of salary differential which can be maintained before good faculty members leave the state. There is every indication that they are going to leave the system. We are especially concerned that it is all too often the good faculty member who leaves. They have numerous job opportunities. Those of lesser ability have few, if any, other opportunities and remain. Such a situation is clearly undesirable. Furthermore, recruiting of teachers to South Dakota is clearly a difficult task. Most of them have never been to the state and while those of us who live here have very fond feelings for the state, it nevertheless is true that a majority of those who have never been here react negatively to it. They somehow picture South Dakota as an isolated state with constant 120° temperatures in the summer and -40° in the winter. Consequently, as we try to recruit faculty members to the state, we find ourselves in great difficulty because most of them expect a higher salary in order to live here. Certainly most businessmen who employ personnel agree that it is a good practice to pay a good employee at an above average salary than to pay an average employee an average salary. We feel so strongly about the need for competitive salaries that we think it would be desirable to achieve better than average salaries even if it means heavier teaching loads. Steps must be taken to insure that faculty salaries reach the mid-point nationally within the next five years -- earlier if possible.

In addition, every effort must be made to insure adequate salaries, fringe benefits, and working conditions for all classified employees.

TEACHING LOADS

We are in a national market and should have competitive teaching loads as well as competitive salaries. While we would like very much to see the teaching loads competitive, we believe this is of somewhat lesser importance than the salaries themselves. We believe that we have hardly scratched the surface on ways to accommodate more students per faculty member without reducing overall quality of education.

FRINGE BENEFITS

Committee F's comments concerning fringe benefits are very well taken. The Regents' group insurance program implemented on July 1, 1970 was a major step forward and will enable South Dakota to be much more competitive in this area.

RETIREMENT PROGRAM

We are in general support of Committee F's comments on retirement:

The Regents' retirement program has to be substantially improved. The study committee recommends TIAA-CREF and there are, of course, some major advantages to that program. We are not going to recommend that only that program be considered but if that one is not made available in South Dakota, we strongly urge that one similar in quality and benefits be provided to our faculty members. We think this must be placed rather high on the priority lists and should be implemented within the next two years.

SICK LEAVE

This should be further studied and necessary changes made.

SABBATICAL LEAVE

The pledge of service to an institution following a sabbatical should be reduced from 2 to 1 year.

SPECIFIC WORKING CONDITIONS

Efforts must be made to achieve the following:

1. Adequate office space (individual offices if at all possible).
2. Adequate clerical help. It does not make sense to pay a faculty member to type letters.
3. Funds to attend essential professional meetings.
4. Provisions for research. This must not compete with teaching but complement it.
5. Faculty involvement in the formation of institutional policy. This already prevails on many campuses and is desirable. It does not mean that faculty will "run" the institution. However, faculty members must have a voice in the operation of the campus.
6. All conditions of employment should continue to be free of discrimination on any basis.

CHAPTER VII
TECHNICAL AND ADULT EDUCATION

GENERAL

Overlaps of courses and students between collegiate and non-collegiate work in technical and adult education make it difficult to differentiate programs to speak only to the needs for collegiate education in this area. Definition of terminology should be useful, therefore for this report the following operational definitions are effective:

1. Vocational education - that education designed to enable a student to become proficient in an occupational skill involving the use of tools and equipment or routine procedures. It may require mathematical or communicative skills at the high school level, but does not require theoretical background. The product of this education becomes the journeyman practitioner of a particular trade.

2. Technical education - that education positioned sequentially between vocational and collegiate education. It may involve the same hand skills training as the vocational level, but in addition it requires theoretical background of a highly technical nature and in most cases requires collegiate level mathematics, science, and English. Typically, the technician has college level academic ability, but he is not attracted to the broad general education required in college and he does not desire to work to such advanced levels as the professional whom his work supports. Programs vary from two to four years in length.

3. Adult education - that education designed to enable the adult to improve his personal or professional life by retraining in a new or adding to an original educational level. Adult education lies outside the normal 8-4-4 pattern. It may be either collegiate or non-collegiate and may or may not culminate in a degree.

RECOMMENDATIONS

1. A single institution in the state should be designated to offer all technician level training.

   A. One of the most expensive types of education is that designated as technical. The state of South Dakota cannot afford unnecessary duplications of this type of training. The numbers of students who would attend such an institution in this state is not large enough to justify two schools.

   B. Experience over the country shows clearly that technical education reaches its best level when it is not a second class offering located on a college campus, and experience also shows clearly that vocational students are better served by giving them their training in separate institutions of their own.

C. Legislation would be required to implement this recommendation, since the area vocational schools would have to be limited to vocational work.

D. Non-credit vocational programs would not be offered in any college, university or technical institute in South Dakota. These should be reserved to the area vocational schools.

2. Adult education needs (including extension) should be met by creating a Division of Continuing Education for the state with headquarters in the Regents' Office.

A. All public collegiate and technical level education in the state including all work now offered through the Extension Departments of the several colleges and universities should be administered through the Division Office in Pierre.

B. Each of the state schools should be designated as an extension center and present directors of extension should be made responsible for extension offerings within defined geographical areas.

C. Courses to be offered in extension must be approved in advance by the academic department of one of the institutions which offers that course in its regular catalogue.

D. Each person teaching an extension course must be approved by the department which approved the course.

E. Extension credit will only be collected in the Office of the Division and will be transferred to any of the several institutions at the request of the student.

F. Course prerequisites may be upheld but no admission criteria shall be necessary to take any course through this division. Admission criteria will only become a consideration when the student sends his transcript to an institution for degree purposes.

G. All state institutions will accept Extension Division credit at face value, on the same basis as any work from an accredited institution is accepted.

H. The Division should be charged with developing the breadth of extension offerings and with administering suitable correspondence courses at the collegiate level.

I. Central office administrative costs should become a regular budget item of the Commissioner's office, but courses should be required to remain self-supporting.

8. Industrial Arts Education programs should be restricted to no more than two institutions.

A. Industrial Arts education is really peripheral to the assignment of Committee G, but it does impact on Committee G's recommendations and their implementation. Strong elementary and secondary programs in Industrial Arts provide the informational basis for developing interest among students in the industrial area as a significant occupational field. Typically, these programs have been small and poorly staffed and equipped. They have not been offered generally in elementary schools. In consequence, the fields of work into which such training may lead are not well recognized by students. This permits the over accent on college which has been noted before in this plan.

B. Equipment and faculty costs for Industrial Arts education are very high (see report of Committee D.). To encourage students to enter the field, to increase the numbers of fully qualified teachers and in turn to make possible increased Industrial Arts Education in public schools, high quality programs and high campus status are essential. Consolidation of present small inadequate programs on no more than two campuses would provide the base for dramatic imporvement at lowered cost per student.

Appendix A

A Study in Engineering in South Dakota

The following analysis has been done to show what kind of savings could be expected if all of engineering were at the School of Mines. We also think there would be merit in putting all of it at South Dakota State University and while we have not done detailed analysis of the savings there, we think that the savings would be similar either way with a consolidation of two programs into one.

Engineering Education in South Dakota

I. INTRODUCTION

An analysis of engineering education in South Dakota must consider the local conditions existing on both SDSU's and SDSM&T's campuses and also the past, present and future trends in engineering in the U.S. There can be no doubt that quality engineering education is expensive. One comprehensive study indicates that the costs are about twice as high as the average of other courses. Any professional field is bound to be more expensive because of the high degree of specialization which makes unique demands on education resources.

We wish to briefly describe the national engineering educational picture and relate this to the South Dakota scene. Certain changes must take place in our present system if we are to remain in the main stream of American education.

In support of engineering reorganization in South Dakota, we will lean heavily on the general philosophy expressed by F. E. Terman in "A Study of Engineering Education in California."

II. ENGINEERING IN THE U.S.

A. Enrollment

1. Undergraduate

Engineering undergraduate enrollment in the U.S. has been relatively constant for the past several years. Approximately 235,000 students have been enrolled full-time in about 270 engineering schools. Although the number of students enrolled in the freshman year has declined gradually in recent years, the total undergraduate enrollment has stayed fairly constant. This has been attributed to the growth in junior colleges and the subsequent transfer of some of their graduates in four year engineering programs. These transfers have offset the decline in the freshman enrollment to keep the total enrollment constant.

2. Graduate

Graduate enrollment in engineering has changed markedly from the 1940's. A rapid increase occured in the mid-1950's. This increase was the result of a growing demand by industry, government and universities for advanced degree people as well as a substantial increase in federal funds earmarked to support graduate work in engineering and science.

In the last few years, a decrease has occurred in the graduate school enrollment. Several factors have brought about this change. The economic status in the U.S. has curtailed the hiring policies of government, universities, and industry; the funds for graduate programs leveled off and in certain areas decreased; the draft laws were changed in a way to discourage graduate study immediately following an undergraduate degree. In 1969 there were 20,014 and 1 ,298 full time students in master's and doctor's programs.

Engineering Degrees, All U.S. Institutions, 1949-69

Year ended June 30	Bachelor's[a]	Master's[b]	Doctor's
1969[c]	39,972	14,980	3,387
1968[c]	36,802	15,152	2,933
1967	36,186	13,887	2,614
1966	35,815	13,677	2,303
1965	36,691	12,056	2,124
1964	35,226	10,827	1,693
1963	33,458	9,635	1,378
1962	34,735	8,909	1,207
1961	35,860	8,177	943
1960	37,808	7,159	786
1959	38,134	6,753	714
1958	35,332	5,788	647
1957	31,211	5,232	596
1956	26,306	4,724	610
1955	22,589	4,484	599
1954	22,236	4,177	590
1953	24,164	3,783	592
1952	30,286	4,141	596
1951	41,893	5,156	596
1950	52,732	4,924	474
1949	45,200	4,798	417

[a] Includes four-year and five-year curricula.

[b] Includes other post-baccalaureate, pre-doctoral degrees.

[c] Data for 1968 and 1969 from Engineering Manpower Commission; for earlier years from U.S. Office of Education.

TABLE 1

Source: Journal of Engineering Education, Jan., 1970

ACTUAL AND PROJECTED ENGINEERING DEGREES AWARDED
BY U.S. SCHOOLS, 1965-1978

Year	BS Degrees	MS Degrees	PhD Degrees	Total Engrg. Degrees
1965	36,700	12,100	2,100	50,900
1966	35,800	13,700	2,300	51,800
1967	36,200	13,900	2,600	52,700
1968	38,000	15,200	2,900	56,100
1969	40,000	15,000	3,300	58,300
1970	40,300	15,600	3,600	59,500
1971	39,900	17,100	3,900	60,900
1972	44,800	20,300	4,300	69,400
1973	45,900	22,200	4,800	72,900
1974	47,500	24,200	5,300	77,000
1975	49,000	26,100	5,800	80,900
1976	50,600	28,000	6,300	84,900
1977	51,900	30,000	6,800	88,700
1978	53,100	32,000	7,400	92,500

TABLE 2

Source: Engineering Manpower Commission, Bulletin No. 17, 1970

It is anticipated the graduate enrollment will start another upward swing in the early and mid - 1970's owing to a reversal of the above mentioned factors which have put a halt to the growth pattern.

B. Degrees

1. Undergraduate

The number of engineering degrees are listed in TABLE 1. The bachelor's degrees reached a peak in 1950 due to the post-war surge in enrollment and has been fairly constant at 35,000 from the mid - 1950's to the mid - 1960's. The projected engineering degrees are shown in TABLE 2. A steady increase is expected at all degree levels through the 1970's.

C. Costs

1. Undergraduate

a. General

As with any undergraduate program, the cost of operation can be broken into direct instructional costs in the classroom and laboratory and the supporting costs of capital investments in the form of buildings and equipment. (The indirect costs of administration and services such as physical plant, Dean of Students, library, will not be considered since they will not vary in cost to any degree from one educational program to another.)

Typically, an undergraduate engineering curriculum will consist of 45% engineering courses and 55% non-engineering courses. Progressing from the freshman to senior year, the course work might be distributed between engineering and non-engineering in the following way:

	Fresh.	Soph.	Jr.	Sr.
Engineering Courses	10%	25%	70%	80%
Non-Engineering Courses	90%	65%	30%	20%

The first two years consist of nearly 30% engineering courses and 70% non-engineering courses while the situation is reversed for the last two years.

b. Classroom Instruction

The classroom instructional costs for the first two years are low because 70% of the course work is in non-engineering subjects taught by the lecture method to large numbers of students. The engineering courses are mainly problem solving courses where section sizes are limited to 25-35 students as is found in mathematics.

The costs during the last two years are considerably higher because only 30% of the course work is in non-engineering courses. If a department does not have 20-30 students in each departmental option, the instructional costs will further increase.

Another factor which adds slightly to higher costs in engineering versus liberal arts is that in a professional field, the average salary of the staff is higher. This factor adds about a 10% increase to the direct instruction costs in engineering.

c. Laboratory Instruction

The laboratory course work that takes place outside of engineering occurs during the first two years. The large enrollments insure that the section sizes are in the range of 15-20 and the space and equipment are utilized to the fullest.

Engineering laboratories are no more costly than the science laboratories if the enrollments are comparable. During the junior and senior levels, students concentrate their course work in their major department, resulting in smaller enrollments in the laboratory courses. Owing to the specialized nature of both space and equipment in different engineering laboratories, the utilization of the laboratories are lower, and hence more costly than general purpose science laboratories.

Whereas general purpose science laboratories might attain 75-85% utilization, engineering laboratories would be doing well at 45-55%. To achieve this level of efficency, an option within a department should have 20-30 students enrolled at both the junior and senior levels.

2. Graduate

a. General

Classroom teaching costs of graduate courses will be higher than undergraduate courses in engineering primarily because of smaller class size. It will be further increased due to the qualifications and hence, higher salaries of the staff members involved with advanced programs.

There is a trend in graduate schools to introduce interdisciplinary programs. This has been appealing for two reasons:

(1) The distinction between the various disciplines in the practicing world of engineering is being lost. The problems of the future are interdisciplinary in nature.

(2) The economic plight of higher education has forced a second look at what can be regarded as highly inefficient autonomous departmental units. The merging of academic programs has resulted in highly effective interdisciplinary programs.

There has been a trend to provide a non-thesis path to a masters degree in engineering. This is partly in response to many people who need the advanced course work in their job but not the training in research methodology, and in part due to the elimination of master's thesis for those pursuing a doctoral degree.

b. Graduate Instruction Summary

Graduate education is more expensive than undergraduate education primarily due to smaller class size and thesis work. A properly run program should recover from external sources, all supervisory costs, equipment expenses, student stipends, and indirect costs. Leading graduate programs in the U.S. have not expanded more rapidly than external funds have been available. The federal government has been the major supporter (about 70% of the funds) of graduate engineering and science education.

Classroom instruction on the graduate level is no more expensive than the senior year of undergraduate school providing class sizes are the same. Both levels involve problem solving courses where class sizes are kept in the 25-35 range.

One trend toward interdisciplinary programs which increases class sizes and another trend toward greater numbers of non-thesis degrees being granted have had a positive effect in decreasing costs in graduate programs.

D. Quality

1. General

Quality in an educational program is evidenced by offering sufficient courses utilizing instructional devices taught by competent instructors so that the student gains adequate knowledge to self-develop in an occupational field. An institution "well-heeled" can accomplish this without worrying about constraints imposed by financial consideration.

Other institutions can only attain quality by an efficient operation carried on at reasonable costs. It all reduces to a consideration of the cost per student credit hour. The critical question is how to keep the unit cost down and maintain quality.

There are many ways to keep the costs down but most of them adversely affect quality, such as: pay low salaries (leads to poor instruction), don't buy equipment (leads to inadequate learning), reduce staff but keep salaries high to attract good people (leads to professors teaching outside of their area of competency or a reduction in course offerings below a reasonable number for a quality program).

There is only one way for an institution under financial constraints to offer a quality program. A sufficient number of students must be enrolled to make up classes of reasonable size which then justifies competent staff members to handle a variety of courses at reasonable cost.

Basically, quality is intimately related to the student numbers game.

III. ENGINEERING IN S.D.

A. General

The two schools of engineering in the state are of medium size on the undergraduate level and should be classified as small to medium size on the graduate level. The doctoral programs at both schools are new and are of very small size.

Both schools offer programs in civil, electrical and mechanical engineering. In addition to these programs, SDSM&T has chemical, geological, mining and metallurgical engineering (the latter three are closely allied in the mineral industry areas) while SDSU has agricultureal engineering and engineering physics. Bachelor's and master's degree programs are available in all these fields while the doctor's degree is granted in electrical and geological engineering as SDSM&T and in agricultural and civil engineering as well as engineering physics at SDSU.

The questions facing S.D. are:

1. Should the two engineering schools continue their present course?
2. Should consolidation take place between the two programs?
3. If consolidation takes place, how much should occur?
4. What ramifications would take place as a result of consolidation?

The remainder of this paper will present views to answer these questions.

B. Size of Programs

The size of a program as characterized by the enrollment and degrees granted is a critical indication of quality (supra.) TABLE 3 lists the fall 1969 engineering enrollments at the two schools. TABLE 4 shows the degrees granted for a few selected years.

During the fall semester of 1969, there were 233,520 full-time undergraduates enrolled in 265 schools in the U.S. The average enrollment per school was 880. SDSU's enrollment was slightly below average while SDSM&T was somewhat above. SDSM&T's enrollment was 39.3% larger than at SDSU. If schools were classifed by small, medium and large, both S. D. schools would be medium size.

There were 34,312 full-time graduate students enrolled in 183 schools for an average of 187 per school. (With 81 and 78 enrolled at SDSU and SDSM&T respectively, both programs must be operating efficiently during the first two years. It is only in those departments, where the enrollment is less than 25, that one or two high cost departmental courses creep in during the sophomore year.) (See page 21)

In the areas duplicated, the civil and electrical engineering programs are of comparable size while mechanical engineering at SDSM&T is about 50% larger at the undergraduate leve. Graduate enrollments in these programs are nearly the same.

The degrees picture is curiously different. SDSM&T grants nearly twice as many B. S. engineering degrees as SDSU but its enrollment is only 40% larger. This has been true for several years and the only plausible explanation is SDSU's attrition rate must be higher than SDSM&T's. In turn this means that the cost for a B. S. degree must be higher at SDSU than at SDSM&T holding other things equal. Perhaps a bit of proselyting is occuring among the various colleges at SDSU. When this occurs, engineering is always the loser, the net flux is almost always out of the technical fields.

C. Instructional efficiency

1. Classroom

Even though the enrollments in the C.E., E.E., and M.E. departments on both campuses are fairly large, further efficiency could be obtained if they were larger. If a department were to have two options for quality, they should graduate 40-60 B.S. (Continued on page 9)

TABLE 3

ENGINEERING ENROLLMENTS
(On Campus Day Students)
Fall Semester 1969

SDSU

Dept.	Freshmen	Soph.	Juniors	Seniors	Total Undergrad.	Grad.	Total
Agric. E.	19	11	12	16	58	9	67
Chem. E.	--	--	--	--	--	--	--
Civil E.	84	38	54	51	227	25	252
Elec. E.	79	53	35	54	221	18	239
Geol. E.	--	--	--	--	--	--	--
Mech. E.	47	31	38	36	152	23	175
Met. E.	--	--	--	--	--	--	--
Engr. Physics	18	11	13	16	58	3	61
Unclassified[1]	49	6	2	--	57	--	57
Other[2]	9	4	4	--	17	--	17
Totals	305	154	158	173	790	78	868

SDSM&T

Dept.	Freshmen	Soph.	Juniors	Seniors	Total Undergrad.	Grad.	Total
Agric. E.		--	--	--	--	--	--
Chem. E.		42	51	39	132	10	142
Civil E.		61	46	51	158	25	183
Elec. E.		59	44	58	161	14	175
Geol. E.		21	20	10	51	7	58
Mech. E.		61	46	89	196	13	209
Met. E.		10	8	4	22	5	27
Mining E.		8	16	17	41	7	48
Engr. Physics		--	--	--	--	--	--
Unclassified[1]	339	--	--	--	339	--	339
Totals	339	262	231	268	1,100	81	1,181

[1] Unclassified - those students who have declared engineering as their field of study but have not identified a departmental major.

[2] Other - those students in the process of changing to another college at SDSU.

TABLE 4

Degrees Granted at SDSM&T and SDSU

Bachelors Degrees

	1964-65		1967-68		1968-69		1969-70	
	SDSM&T	SDSU	SDSM&T	SDSU	SDSM&T	SDSU	SDSM&T	SDSU
Agric. Engr.	--	9	--	8	--	12	--	12
Chem. Engr.	11	--	28	--	29	--	29	--
Civil Engr.	19	31	19	22	22	36	35	36
Elec. Engr.	35	39	36	26	39	20	45	38
General Engr.	--	--	--	--	--	--	--	--
Geol. Engr.	2	--	4	--	8	--	8	--
Industrial Engr.	--	--	--	--	--	--	--	--
Mech. Engr.	37	25	31	21	51	21	72	25
Metallurgical Engr.	3	--	10	--	12	--	3	--
Mining Engr.	3	--	8	--	9	--	14	--
Engr. Physics	--	8	--	3	--	2	--	15
Total Engineering	110	112	136	80	170	91	206	126

Masters Degrees

	1964-65		1967-68		1968-69		1969-70	
	SDSM&T	SDSU	SDSM&T	SDSU	SDSM&T	SDSU	SDSM&T	SDSU
Agric. Engr.	--	4	--	7	--	--	--	2
Chem. Engr.	--	--	5	--	8	--	7	--
Civil Engr.	3	5	4	12	10	9	13	16
Elec. Engr.	5	--	7	7	7	7	13	10
Geol. Engr.	2	--	1	--	1	--	1	--
Mech. Engr.	--	6	3	1	4	8	11	5
Metallurgical Engr.	2	--	1	--	5	--	4	--
Mining Engr.	--	--	--	--	1	--	6	--
Nuclear Engr.	1	--	--	--	--	--	--	--
Engr. Physics	--	4	--	--	--	1	--	2
Total Engineering	13	19	21	27	36	25	55	35

candidates a year to maintain the 20-30 class section size in junior and senior level courses and to utilize the laboratories. Neither school is consistantly graduating 50 B.S. degrees in a given discipline. Combining the degrees granted at both schools in the areas of duplication, easily meets the minimum criterion for efficiency in classroom instruction.

For the most part, classroom section sizes on both campuses are of reasonable size. The point should be made that this is only possible by reducing the number of course offerings in options which in turn decreases the quality of the program. Some efficiencies in classroom instruction would be possible by combining the three departments at the junior and senior levels but they wouldn't be great. As mentioned earlier, little savings in classroom teaching costs would be realized at the freshman and sophomore levels. Quality would definitely improve since more courses could be offered at less cost than is presently possible with two engineering schools.

2. Laboratories

Laboratory utilization would nearly double if the programs were combined at the junior and senior levels. Little savings would be present in instructional salaries since laboratory section sizes are near the 15-20 size in the departments where duplication occurs and more sections would have to be added. The existing departmental laboratories could handle twice the number of sections that are presently scheduled.

D. Equipment

Much of the equipment used in these departmental laboratories would not have to be duplicated because of the higher utilization of the laboratory. TABLE 5 shows the O&M from state funds spent at each school in the areas of duplication. General engineering at SDSU is incorporated in civil engineering at SDSM&T and must always be included in any comparisons. Also, Engineering shops are partially in M.E. at SDSM&T. We would estimate that 75% of those funds are spent in unnecessary duplication. Rather than considering a $20,000 saving a year, it would be far better to look first at the current funding level and then what is required for a quality program.

With $100,000 worth of equipment for each option, a department should have a minimum of $300,000 worth of equipment. Most departments have only half this amount. A ten year depreciation period is long for technical equipment but it will be used in this calculation. On a straight-line depreciation basis, each department should be reinvesting $30,000 per year for a quality program. A quick glance at TABLE 5 reveals this to be far from the case. Combining the O&M from both campuses would result in about $60,000 available toward the desirable figure of $90,000. For the past several years, SDSM&T has received about $25,000 each year into these three departments from external sources. Combining this external support with the state funds which would be available, would bring the funding level close to the desired level.

TABLE 6

O&M[1] at SDSU and SDSM&T

SDSU

			EE		ME		Engr. Shops		Gen. Engr.		Engr. Res.[2]	Total	
	O&M	Equip.	O&M	Equip.	O&M	Equip.	O&M	Equip.	O&M	Equip.	O&M	O&M	Equip.
FY 70	$14,675	$12,056	$ 5,579	$1,887	$14,813	$11,688	$2,424	$ 140	$1,846	$920	$ 1,062	$40,399	$26,691
FY 69	14,868	11,200	7,279	3,130	4,940	1,812	3,840	2,033	1,072	--	12,830	44,829	18,175
FY 68	9,346	--	9,273	--	6,597	--	4,355	--	1,328	--	14,683	45,592	--
FY 67	13,561	--	24,736	--	9,874	--	2,834	--	1,609	--	10,747	63,361	--
FY 66	4,712	--	5,412	--	4,152	--	3,947	--	1,125	--	8,022	27,370	--
FY 65	8,763	--	10,623	--	8,555	--	3,691	--	1,524	--	7,237	40,393	--

SDSM&T

	CE		EE		ME		Total	
	O&M	Equip.	O&M	Equip.	O&M	Equip.	O&M	Equip.
FY 70	$ 9,365	$ 736	$21,724	$15,794	$15,565	$12,964	$46,654	$29,494
FY 69	3,562	665	21,729	13,782	3,476	827	28,767	15,274
FY 68	2,471	--	4,606	--	4,415	--	11,492	--
FY 67	3,445	--	9,608	--	3,563	--	16,616	--
FY 66	798	--	2,447	--	1,570	--	4,815	--
FY 65	596	--	9,986	--	2,087	--	12,669	--

[1] Data obtained from financial reports. O&M includes equipment purchases.

[2] Engineering Research is not distributed by department in financial report. Therefore, some expenditures probably took place in Ag. E. and Engineering Physics.

Equipment Inventory Fall 1969

	SDSU	SDSM&T
Civil Engineering	$159,244	$ 69,301
Electrical Engineering	251,490	165,704
Mechanical Engineering	132,161	149,962
Total	$542,895	$384,967

Graduate equipment is expensive but should be mostly purchased through sponsored research. If the programs were combined all of the equipment would be in one place. The research would be concentrated which would lead to a more fully equipped research laboratory, eliminating the duplication of equipment. The resultant program would be much stronger due to the concentration of facilities in fewer research areas than is the case at present.

IV. OTHER ISSUES

WHAT CHANGES IN STAFFING WOULD TAKE PLACE AT SDSM&T IF ALL LEVELS OF C.E., E.E., AND M.E. AT SDSU WERE TRANSFERRED TO SDSM&T?

The analysis was made on FY '70 data. The enrollment at SDSU for the fall semester is given in TABLE 3. The number of students progressing from freshman to senior normally decreases over the long term. Variations also occur in any given year as can be seen in TABLE 3. The senior enrollments are larger than the sophomore enrollments. This can occur due to wide fluctuations in the entering freshman class from one year to the next. To average this out for the following analysis, the total sophomore-senior enrollment was proportioned among the sophomore, junior and senior levels by a 45:30:25 distribution. Before this distribution took place, the unclassified students were proportioned to the departments according to the percentage of students enrolled in the departments. The freshmen were not included in the redistribution among the levels (i.e. sophomores-seniors) since it was felt that SDSU has a fairly large attrition rate between the freshman and sophomore years and the ratio between freshmen and sophomores may not be too far from the truth on a long term basis. The distribution of students used in the following consideration is shown in TABLE 6.

TABLE 6

Distribution of Students at SDSU for Calculation

	Fresh.	Soph.	Jr.	Sr.	Grads.
C.E.	104	66	44	36	25
E.E.	98	65	44	36	18
M.E.	57	47	32	26	23
Total	259	178	120	98	66

The curricula in C.E., E.E., and M.E. at SDSM&T was analyzed to find out how many sections would have to be added to take care of SDSU's enrollment. The section enrollments for the fall and spring semester at SDSM&T were studied to determine what were the typical section sizes for any course and what sections were only partially filled. The section size for problem courses was taken as 30, for laboratories 20, and for humanities and social sciences courses as 45. There were many exceptions such as for freshman English, 20 was used for the section size since we have felt this to be desirable. Also in every department there are certain courses taught in sizes of 50. Every course was analyzed on the actual enrollments for the 1969-70 year. For those sections where the enrollment was at least 30% below the normal section size, a number of students equal to the difference between the actual and normal size could be absorbed.

The following illustrates the types of calculations that took place.

English 430 is required of C.E. and M.E. students in the second semester of the junior year. From TABLE 6 there are 76 from SDSU that would be enrolled in this course during that semester. The teaching data for that course at SDSM&T for the spring semester showed the typical section size to be 25 and all sections were nearly full (20-30). Since no section had an enrollment 30% less than 25 (17-18), three more sections would have to be added to accommodate the 76 students. The course is 2 credit hours so the Language and Social Science department would have to teach 6 (2x3-sections) credit hours of courses due to these added students. Every single course was analyzed in this manner.

In order to determine the number of staff required in a department, each curriculum (C.E., M.E., and E.E.) was analyzed by level (freshman-senior). The total number of course credit hours added to a department was divided by 20 to determine the FTE faculty required. A faculty load per semester was taken at 10 credit hours and not 12. The reason 10 was chosen is that the maximum is taken as 12 credit hours but as in scheduling rooms, it's impossible to obtain 100% utilization. Also, laboratory classes tend to drop the maximum to less than twelve. Twelve credit hours of laboratory would mean that a professor would have 36 contact hours per week.

Graduate students were treated differently. It was assumed that 50% would be thesis and the remainder non-thesis. All classroom teaching could be absorbed without adding sections so no staff would be required for all of the graduate students in the classroom. Staff would be required to direct theses. One faculty was equated to 10 M.S. thesis candidates. To illustrate, for the 18 graduates in E.E. at SDSU, 9 would be thesis candidates. SDSM&T would need 0.9 FTE for all 18 graduate students.

TABLE 7 lists the FTE staff required by level and department for the addition of students listed in TABLE 6. The additional staff required at SDSM&T would be 26.0 for lower divisions, 12.6 for upper divisions and 3.4 for graduates for a total of 42.0. It should be pointed out that although the students in geology and metallurgy courses couldn't be absorbed into existing sections, the teaching load could be absorbed within the departments. The net faculty required would then drop to 41.3.

Undoubtedly all of the undergraduate students at SDSU wouldn't come to SDSM&T. The percentage of students that would come, would be the same percentage to be applied to the figures in TABLE 7 to determine the staff requirements at SDSM&T. If 60% of the undergraduates transferred only 23.2 (38.6 x 0.60) staff members would be required for the undergraduate program.

Also, if only the upper division were transferred, 7.6 (12.6 x 0.60) staff members would be needed.

TABLE 7

Full Time Equivalent (FTE) Faculty Requirements to Instruct the 1969 Engineering Student Enrollment at SDSU

	CE	EE	ME	Math	Phys.	L&SS	Met. E.	PE	CC	Gen. E.	Chem.	Geol.	Total
Freshmen	1.7			3.6		6.0		0.7		0.7	1.9		14.6
Sophomore	2.6	1.2	0.5	2.3	2.1	2.2			0.2			0.3	11.4
Junior	2.0	1.4	0.8	0.5	0.2	1.1	0.4		0.2				6.6
Senior	1.8	1.4	1.1	0.5	0.3	0.9	—	—	—	—	—	—	6.0
Subtotal	8.1	4.0	2.4	6.9	2.6	10.2	0.4	0.7	0.4	0.7	1.9	0.3	38.6
Graduate	1.3	0.9	1.2	--	--	--	--	--	--	--	--	--	3.4
Total	9.4	4.9	3.6	6.9	2.6	10.2	0.4	0.7	0.4	0.7	1.9	0.3	42.0

WHAT PERSONNEL BUDGET ADJUSTMENTS WOULD HAVE TO BE MADE AT SDSU AND SDSM&T IF THE TWO PROGRAMS WERE CONSOLIDATED?

Case I -- All levels combined, freshmen through graduate.

From TABLE 7 a total of 41.3 faculty members would be added to SDSM&T's staff (i.e. 42 minus 0.4 in Met. and 0.3 in Geol. since the teaching load can be absorbed without adding staff). Other supporting personnel would have to be added. TABLE 8 lists the budget change required at SDSM&T.

TABLE 8

Faculty and Staff Need at SDSM&T and Cost

a.	41.3 faculty at $12,000	=	495,600
b.	1.0 technician at $8,500	=	8,500
c.	1.5 secretaries at $3,500	=	5,250
d.	1.0 assistant to registrar at $7,000	=	7,000
e.	2.0 non-professional librarians at $5,000	=	10,000
f.	1.0 assistant to dean of students at $8,500	=	8,500
g.	2.0 clerks - business office at $5,000	=	10,000
h.	1.0 groundsman - physical plant at $6,000	=	6,000
i.	0.5 policeman at $5,000	=	2,500
j.	1.0 keypunch operator - computer center at $4,000	=	4,000
			$557,350

To analyze the net change that would occur one must study the change on SDSU's campus if the C.E., M.E. and E.E. programs were discontinued. It must be realized that for every person added at SDSM&T in a service area, (including academic) a like position at SDSU wouldn't be needed as a result of the loss of students. In the faculty-service areas, 24.1 FTE's (42.0 minus the 17.9 FTE's required in C.E., E.E., and M.E.) could be eliminated at SDSU. There is little savings in these positions since for every staff member lost at SDSU a corresponding member would have to be added at SDSM&T (with the exception of 0.4 in metallurgy and 0.3 in geology). Also the non-academic positions (i.e. secretaries, etc.) added at SDSM&T wouldn't be needed at SDSU. These non-academic positions total $61,750 from TABLE 8.

The net change or savings is the difference between what would be required on both campuses after the consolidation and the amount currently being spent at SDSU in C.E., E.E., and M.E. and certain other areas. The following calculations show what can be expected in savings. Budget data is taken from SDSU FY'70 operating budget.

Current State monies from the general fund at SDSU.

Department	Engineering Experiment[1]	General	Total
Dean of Engineering		31,200	31,200
Civil Engineering	19,450	129,850	149,300
Electrical Engineering	17,200	175,233	192,433
General Engineering[2]		42,800	42,800
Mechanical Engineering	19,300	119,505	138,805
Engineering Shops[3]	3,100	37,250	40,350
Engineering Physics[4]	6,645		6,645
	65,695	535,838	601,533

1. The Engineering Experiment funds are not agriculture experiment station funds.

2. General Engineering offers courses in computer programming and engineering graphics which is included in SDSM&T's C.E. department.

3. Engineering Shops offers courses which have been dropped from SDSM&T's M.E. curriculum several years ago.

4. Engineering Physics is included because Engineering Experiment funds were budgeted.

State monies required at SDSU after consolidation

1. Administrative $15,600

Of the $31,200 in the Dean of Engineering budget, a generous figure of ½ that amount might be required to administer the Engineering Physics and Mathematics departments which are currently under the Deans Office. Probably both of these departments would be absorbed in other colleges with far less expense than the $15,600 provided.

2. Agricultural Engineering Support $24,000

Two staff members would be capable of handling all of the courses in the Ag.E. curriculum which are now being handled by the General, Civil and Mechanical Engineering Departments.

3. Shop Facilities $15,000

Perhaps some of the shop courses would still be required by other curricula hence, 1½ members could be provided. I suspect this entire operation could be eliminated.

TOTAL $54,600

Funds Required at SDSM&T in E.E., C.E., and M.E.

17.9 FTE's[1] at $12,000 (TABLE 8)		214,800
1.0 Technician at $8,500		8,500
1.5 Secretaries at $3,500		5,250
	TOTAL	$228,550

1. All other faculty (41.3 - 17.9 = 23.4) and support positions listed in TABLE 8 don't enter the calculation because the budget at SDSU should be decreased the same amount as SDSM&T's budget is increased for these positions, hence, no net effect on costs.

Net Change after Consolidation.

Monies available		$601,533
Monies required at:	SDSU	54,600
	SDSM&T	228,550
NET SAVING		$318,383

A net saving to the state in salaries as a result of consolidating both programs should be about $300,000 a year. It should be realized that $65,000 of this is due to eliminating Engineering Experiment funds used at SDSU and another $15,000 from the elimination of the Dean of Engineering's Office.

If only a fraction of the students at SDSU enrolled at SDSM&T, the saving would be proportionately less. Another important consideration is pertinent. Of the students that wouldn't enroll at SDSM&T perhaps 50% would go to a non-S.D. public institution and the other 50% might go into other fields in S.D. public institutions. These students constitute another saving to the state.

For each student going to a non-S.D. public institution, a 100% savings in instructional costs result. These are estimated as:

Approximate undergraduate Yearly Costs		$1,500
Yearly Tuition $11.50 x 36 cr. hrs.		- 414
	Net saving	$1,086

For each student remaining in a S.D. public institution a lesser savings results. Assuming that other programs cost 20% less than engineering, the saving per student is:

Engineering Yearly Cost	$1,500
Non-Engineering Yearly Cost	1,200
	$ 300

If 40% of the engineering students at SDSU didn't enroll at SDSM&T and ½ of them went to non-S.D. public institutions and the others to S.D. public institutions in non-engineering programs, the net saving would be as follows:

Saving on Students to non-S.D. public institutions:

number of students 20% of 647	= 129	
saving : 129 x $1,086		$140,094

Saving on Students to S.D. public Institutions in non-engineering programs

129 x 300	=	$ 38,700
TOTAL Annual Saving		$178,794

Case II -- Upper Division (junior and senior) and Graduate Combined

From TABLE 7 a total of 15.6 FTE faculty members would be added to SDSM&T. (i.e. 16 minus the 0.4 in Met. which can be absorbed without an increase in staff). TABLE 10 lists the staffing requirements for consolidation.

TABLE 9

Faculty and Staff Need at SDSM&T and Costs

a.	15.6 faculty at $12,000	=	187,200
b.	1.0 technician at $8,500	=	8,500
c.	1.0 secretary at $3,500	=	3,500
d.	0.7 assistant to registrar at $7,000	=	4,900
e.	1.5 non-professional librarians at $5,000	=	7,500
f.	0.7 assistant to dean of students at $8,500	=	5,950

g.	1.5 clerks - business office at $5,000	=	7,500
h.	0.7 groundsman - physical plant at $6,000	=	4,200
i.	0.4 policeman at $5,000	=	2,000
j.	0.5 keypunch operator - computer center at $4,000	=	2,000
			$233,250

Assuming that the freshman and sophomore years at SDSU would be identical to those at SDSM&T, all of the staff members (26.0 FTE) listed at these levels in TABLE 8 would be still needed at SDSU. The staff members (4.1 FTE's) listed in other than C.E., E.E., and M.E. in the upper division in TABLE 8 would not be required at SDSU.

State monies required at SDSU after consolidation.

1. Administrative $20,000

About $20,000 should be ample to administer the two-year pre-engineering program as well as the engineering physics and mathematics departments.

2. Staff for Pre-Engineering $82,800

The engineering staff required to teach the pre-engineering courses is calculated from TABLE 8.

Programs	FTE
C.E., E.E., M.E.	6.0
Computer Science	0.2
General Engineering	0.7
Geological Engineering	0.3
	7.2

Probably the geological engineering courses required would be changed to be a part of the upper division so they could be taught at SDSM&T rather than add a part-time person for this purpose at SDSU. Therefore, the total FTE's required at SDSU is 6.9. Total cost is 6.9 x $12,000 = $82,800. These staff members would handle all of the courses required by agricultural engineering.

3. Shop facilities $15,000

(See discussion in Case I)

4. Support Personnel $15,700

The difference in support personnel (items b-j) in TABLES 8 and 9 would have to be provided at SDSU for the pre-engineering students.

TABLE 8	b-j	$61,750
TABLE 9	b-j	46,050
	Needed at SDSU	$15,700

TOTAL $133,500

Net Change after Consolidation.

Monies available at SDSU (see Case I)	$601,533
Monies required for pre-engineering at SDSU	-133,500
Monies required at SDSM&T	-233,250
NET SAVING	$234,783

Again it should be stated that if a fraction of the students at SDSU matriculate at SDSM&T then the same fraction should be used in the above calculations.

Also the same type of calculation shown in Case I on the students not enrolling in engineering is applicable in this case.

Case III -- Graduate programs Consolidated

The non-engineering courses offered on the graduate level should not be affected at either school since the number of students is small and could be absorbed into existing sections without additional staff. The net savings then will occur within the departments affected (i.e. C.E., E.E., and M.E.). A department offering a graduate program should offer at least 12 cr. hrs. of graduate courses per semester. Every M.S. thesis is pro-rated as the equivalent to 1.2 cr. hrs. of teaching load. On the average, an FTE faculty member can handle 10 M.S. thesis candidates. The calculation of net change is based on the assumption that 50% of the graduate students would undertake a thesis while the others would be non-thesis candidates.

Total number of graduate students at SDSU in C.E., E.E., and M.E. 66

Staff required to teach courses.

At SDSU:

12 cr. hrs. of courses per dept./10 cr. hrs. per faculty member = 1.2 FTE

Total FTE's 3 depts. x 1.2 = 3.6
Cost, 3.6 x 12,000 = $43,200

At SDSM&T:

No staff required to handle these students. They can be absorbed in existing sections

Cost = $0

NET SAVING = $43,200

Staff required to direct theses.

At SDSU:

50% on thesis options = 33 Students. From TABLE 8, 3.3 FTE faculty are required for these students.

Cost, 3.3 x 12,000 = \$39,600

At SDSM&T:

Same number of faculty are required for 33 thesis candidates.

Cost, 3.3 x 12,000 = \$39,600

NET SAVING = \$0

The total Net Saving resulting from combining the graduate programs would be \$43,200.

NET SAVING = \$43,200

IS THERE UNNECESSARY DUPLICATION OF EQUIPMENT WITH TWO ENGINEERING PROGRAMS?

We earlier estimated that about 75% of the funds used for O&M are duplicating efforts on both campuses. The duplication could be eliminated through higher utilization of engineering laboratories. Characteristically, engineering laboratories are being used 10-12 hours per week where general purpose laboratories average 20 hours per week. A doubling of the student body in engineering would double the utilization of the laboratories with no added expenses for equipment.

COULD THE ENROLLMENT TRENDS IN ENGINEERING JUSTIFY TWO VIABLE EFFICIENT ENGINEERING PROGRAMS IN SOUTH DAKOTA?

We think the long range picture indicates that both programs will remain sub-marginal in efficiency owing to relatively low enrollments. Committee B of the Master Plan has projected the college age population in S. D. to remain fairly constant at 50,000 through 1981. In 1968, 25,090 S.D. residents were in college. Of these, 20,614 matriculated within the state. For the 50 states including D.C., an average of 17.1% of a state's residents went to schools in other states. For S.D. the 4,476 residents who went out of the state represents 17.8%. Therefore, it is doubtful if more students will be retained in S. D. to form a pool of potential student for our schools.

The 25,090 S. D. students represents 52% of the 18-21 year old group in S.D. which is slightly above the national average. It appears then that S.D. has been keeping pace with the number of college age students attending college. Therefore, unless the percentage increases markedly country-wide, a further increase in the pool of students to select engineering doesn't appear to be on the horizon. Even if the percentage increases across the country, it is expected that the new students will be in programs more vocational in nature and hence, would not contribute to the available students for engineering programs.

TABLE 10 shows the number of students attending public and private schools within the 50 states. These numbers include resident and non-resident students. S.D. is educating more students for its total population base than are 38 other states.

TABLE 11 lists the number of engineering degrees produced per million population for the various states. There are only four other states that produced more B.S. degrees in engineering per population base than S.D.

In 1967-68, there were 215 (2 of which were to women) B.S. degrees in engineering granted in S.D. There were a total of 2,032 bachelor's degrees granted to males from S.D. institutions. Of these 2,032 degrees, 1,616 were from State Institutions and 416 from private schools. The engineering degrees represent 13.2% of the degrees granted to males from the state institutions and 10.5% of the degrees from all the institutions. The national average is about 13%. Based on the 10.5% one might argue that there is a potential for increasing the pool of engineering students. I think the other data discussed above presents the opposite conclusions. Based on the public schools, we are attracting a fair share of the male students into engineering.

TABLE 10

Student Enrollment[1] in Public and Private Institutions Per 1,000 State Residents[2]

State	Students Per 1,000 Population	State	Students Per 1,000 Population
Alabama	18.8	Missouri	29.2
Alaska	17.1	Montana	27.5
Arizona	41.4	Nebraska	33.0
Arkansas	21.7	Nevada	16.6
California	37.4	New Hampshire	29.1
Colorado	35.7	New Jersey	18.1
Connecticut	26.9	New Mexico	28.3
Delaware	23.6	New York	26.9
D.C.	71.3	North Carolina	20.7
Florida	21.1	North Dakota	32.3
Georgia	17.9	Ohio	24.9
Hawaii	25.4	Oklahoma	34.2
Idaho	28.1	Oregon	33.9
Illinois	27.0	Pennsylvania	23.3
Indiana	20.1	Rhode Island	35.7
Iowa	30.3	South Carolina	15.5
Kansas	35.1	South Dakota	32.8
Kentucky	24.0	Tennessee	25.5
Louisiana	24.2	Texas	26.2
Maine	21.5	Utah	54.3
Maryland	25.9	Vermont	32.3
Massachusetts	36.7	Virginia	18.8
Michigan	29.5	Washington	32.9
Minnesota	31.9	West Virginia	26.5
Mississippi	23.1	Wisconsin	28.9
		Wyoming	29.7

[1] Student enrollment data for fall 1965 taken from AEC Fact Book 1970

[2] Population used was estimate for 1967

Engineering Degree Production 1968-69

No. of Engr. Sch.	State	Population estimated as of 12/31/67	Engineering Degrees 1968-69			Degrees/Million Pop.		
			BS	MS	Ph.D.	BS	MS	Ph.D.
3	Alabama	3,538.1	618	81	33	175	22.9	9.3
1	Alaska	272.4	38	14	0	140	51.5	0
2	Arizona	1,676.0	457	249	39	273	148	23.3
3	Arkansas	1,958.0	209	33	5	107	16.9	2.5
32	California	19,467.7	423	2,504	553	176	128	28.3
5	Colorado	2,038.3	1,008	229	75	494	112	36.8
6	Connecticut	2,942.5	499	241	38	169	118	12.9
1	Delaware	521.1	140	42	8	269	80.7	15.4
3	D.C.	810.3	147	209	29	181	258	35.8
5	Florida	6,166.1	533	263	37	86.5	42.6	6.0
2	Georgia	4,464.9	675	260	32	151	58.1	7.2
1	Hawaii	750.0	117	36	1	156	48.0	1.3
1	Idaho	704.6	128	29	2	182	41.2	2.8
8	Illinois	10,897.4	1,519	599	212	140	54.9	19.4
7	Indiana	5,018.7	1,724	419	149	343	83.5	29.7
2	Iowa	2,809.1	526	171	56	187	60.9	19.9
3	Kansas	2,293.1	520	189	31	227	82.5	13.5
2	Kentucky	3,171.8	280	60	4	88.4	18.9	1.26
8	Louisiana	3,670.7	652	114	24	178	31.2	6.6
2	Maine	985.0	226	19	4	229	19.3	4.1
4	Maryland	3,717.3	612	122	64	165	32.9	17.2
12	Massachusetts	5,458.1	2,072	1,072	229	379	196	41.9
11	Michigan	8,510.8	2,462	663	149	290	77.8	17.5
1	Minnesota	3,637.6	662	145	49	182	39.8	13.5
2	Mississippi	2,332.1	261	82	7	112	35.2	3.0
7	Missouri	4,567.5	1,147	396	63	251	86.5	13.8
2	Montana	724.8	186	54	7	257	74.5	9.6
2	Nebraska	1,488.5	268	55	5	180	37.0	3.4
1	Nevada	477.5	66	6	0	138	12.5	0
3	New Hampshire	671.0	147	50	6	219	74.4	8.9
6	New Jersey	7,041.5	1,285	432	86	183	61.4	12.2
3	New Mexico	1,059.8	337	128	20	319	121	18.9
22	New York	18,223.2	3,822	1,866	376	210	103	20.6
4	North Carolina	4,993.8	687	147	48	138	29.5	9.6
2	North Dakota	647.0	235	72	0	363	111	0
12	Ohio	10,661.7	1,757	763	185	165	71.6	17.3
3	Oklahoma	2,494.3	474	272	71	190	109	28.4
2	Oregon	1,993.9	367	49	14	184	24.6	7.1
15	Pennsylvania	11,717.4	2,720	948	226	232	80.9	19.3
2	Rhode Island	902.9	212	47	28	236	52.0	31.1
3	South Carolina	2,630.4	360	96	7	136	36.5	2.7
2	South Dakota	708.8	260	61	0	368	86.2	0
7	Tennessee	3,884.6	858	200	48	221	51.5	12.3
14	Texas	10,984.9	1,559	604	119	142	55.1	10.8
3	Utah	1,037.2	383	194	39	370	185	37.6
2	Vermont	404.3	120	11	0	298	27.3	0
4	Virginia	4,577.3	859	129	45	188	28.2	9.8
6	Washington	3,127.6	740	183	50	237	58.4	16.0
3	W. Virginia	1,766.4	314	103	15	178	58.3	8.5
4	Wisconsin	4,272.0	863	243	51	202	54.5	11.9
1	Wyoming	350.9	166	33	6	473	94.0	17.1
265		199,220.9	39,667	14,980	3,345	198	75	17.0

Source: Engineering Education, *January 1970, pp. 399-409; as corrected in* Engineering Education, *April 1970, p. 856.*

TABLE 11

In light of the above arguments, I think that to expect an increase in the enrollment in engineering in the future is flying against the facts. As a matter of fact, I think S.D. might consider a reduction in the production of engineering graduates which would probably be brought about by a consolidation of programs.

CAN AGRICULTURAL ENGINEERING SURVIVE AT SDSU WITHOUT THE OTHER ENGINEERING DEPARTMENTS?

The teaching assignments handled by other departments for Ag. E. students could easily be assumed by two additional staff members. I would classify Ag. E. as a low technology field and the level of interaction with other departments is not critical.

TABLE 12 shows the Ag. E. enrollments in the U.S. institutions for the fall of 1969. It can be seen that undergraduate programs are small. Graduate programs are also quite small. Eight programs do not show any graduate enrollment. Alaska, Connecticut, Delaware, Maine, Massachusetts, Nevada, New Hampshire, and Rhode Island don't list a program in Ag. E. Most agricultural departments are split administratively between the engineering and agricultural colleges.

I think one would have to draw the conclusion that agricultural engineering is not so closely related to engineering that it couldn't be a strong viable program itself. In Committee D's report, the U. of Georgia has an Ag. E. program without the presence of an engineering college at the university.

ARE THE OTHER COLLEGES AT SDSU GOING TO BE HURT IRREPARABLY BY THE LOSS OF THE ENGINEERING SCHOOL?

The main interaction between the engineering school and the others is at the graduate school level. At the undergraduate level, engineering students take courses in the other colleges and the opposite flow of students is miniscule. Therefore it can't be argued that the engineering school is a necessity at the undergraduate level.

At the graduate level, the contention is that engineering personnel are a vital cog in the other colleges' research programs. One of the most inefficient ways to carry on research is by using part-time personnel who are involved in teaching in another department. If the college of agriculture is concerned about a loss of efficiency without engineering faculty personnel, they would undoubtedly up-grade their effort by employing full-time research support personnel with the background they desire.

We contend that the other colleges would have a stronger research program by employing full-time research personnel and are in no way dependent on the academic nature of a college of engineering.

CURRICULUM=AGRICULTURAL

		UNDERGRADUATE STUDENTS							GRADUATE STUDENTS						
		BACHELORS DEGREE					TOTAL		MASTERS OR OTHER ADV DEG		DOCTORS DEGREE		TOTAL GRAD STUDENTS		FOREIGN GRADUATE STUDENTS
		1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	FULL TIME	PART TIME	FULL TIME	PART TIME	FULL TIME	PART TIME	FULL TIME	PART TIME	
ALABAMA															
AUBURN U	15	6	11	14	7	0	38	0	2	1	4	4	6	5	2
ARIZONA															
U OF ARIZONA	15	5	2	2	3	0	12	0	3	1	0	0	3	1	0
ARKANSAS															
ARKANSAS ST U	05	6	5	10	11	0	32	0	0	0	0	0	0	0	0
U OF ARKANSAS	15	10	9	10	11	0	40	1	0	0	0	0	0	0	0
CALIFORNIA															
CAL ST POLY SAN LUIS OB	05	17	21	17	26	0	81	1	0	0	0	0	0	0	0
FRESNO ST COLL	05	0	0	3	2	0	5	0	0	0	0	0	0	0	0
U OF CALIF DAVIS	15	5	6	4	5	0	20	0	7	0	6	1	13	1	7
COLORADO															
COLORADO ST U	15	0	10	9	9	0	28	1	12	0	10	0	22	0	0
FLORIDA															
U OF FLORIDA	15	0	0	7	4	8	19	0	4	0	0	0	4	0	0
GEORGIA															
U OF GEORGIA	15	10	29	39	33	0	111	0	14	2	0	0	14	2	2
HAWAII															
U OF HAWAII	05	0	0	0	0	0	0	0	11	0	0	0	11	0	0
IDAHO															
U OF IDAHO	15	4	11	13	6	0	34	0	4	0	3	0	7	0	2
ILLINOIS															
U OF ILLINOIS URBANA	15	27	24	17	45	0	113	2	9	0	13	0	22	0	0
INDIANA															
PURDUE U	15	0	18	13	16	0	47	0	24	0	12	0	36	0	8
IOWA															
IOWA ST U	15	75	30	34	33	0	172	1	15	20	18	2	33	22	12
KANSAS															
KANSAS ST U	15	11	9	11	23	0	54	0	3	8	0	0	3	8	5
KENTUCKY															
U OF KENTUCKY	15	12	7	9	13	0	41	0	3	1	2	3	5	4	1
LOUISIANA															
LOUISIANA POLY INST	15	13	7	2	5	0	27	0	2	0	0	0	2	0	0
L S U BATON ROUGE	15	0	2	9	9	0	20	0	10	0	0	0	10	0	0
MAINE															
U OF MAINE	15	11	7	3	7	0	28	0	3	0	0	0	3	0	0
MARYLAND															
U OF MARYLAND	05	0	1	1	1	0	3	0	0	0	0	0	0	0	0
MICHIGAN															
MICHIGAN ST U	15	0	11	13	14	0	38	0	10	0	26	0	36	0	17
MINNESOTA															
U OF MINNESOTA	15	5	12	11	15	0	43	1	7	0	12	0	19	0	5
MISSISSIPPI															
MISSISSIPPI ST U	15	10	7	7	5	0	29	3	3	9	0	0	3	9	3
MISSOURI															
U OF MISSOURI COLUMBIA	16	17	9	9	19	0	54	0	10	2	4	2	14	4	2
MONTANA															
MONTANA ST U	05	18	6	8	11	0	43	0	1	0	0	0	1	0	0
NEBRASKA															
U OF NEBRASKA LINCOLN	15	36	23	21	26	0	106	0	10	3	0	0	10	3	0
NEW JERSEY															
RUTGERS,THE ST U	15	0	3	2	2	0	7	0	0	0	0	0	0	0	0
NEW YORK															
CORNELL U	1P	0	0	0	0	0	0	0	6	0	27	0	33	0	0
NORTH DAKOTA															
NORTH DAKOTA ST U	15	28	19	24	21	0	92	0	4	0	0	0	4	0	1
OHIO															
OHIO ST U	15	0	8	9	14	12	43	0	10	1	11	2	21	3	15
OKLAHOMA															
OKLAHOMA ST U	15	1	11	10	15	0	37	0	7	0	11	0	18	0	0
OREGON															
OREGON ST U	15	11	3	9	1	0	24	0	1	0	0	0	1	0	0
PENNSYLVANIA															
PENNSYLVANIA ST U	15	0	13	9	13	0	35	0	2	13	1	4	3	17	1
SOUTH CAROLINA															
CLEMSON U	15	16	10	6	12	0	44	0	3	4	2	2	5	6	2
SOUTH DAKOTA															
SOUTH DAKOTA ST U	15	20	12	13	16	0	61	0	6	0	5	0	11	0	2
TEXAS															
TEXAS A + M U	15	29	25	26	35	0	115	2	7	2	13	6	20	8	9
TEXAS TECH U	15	8	0	1	14	0	23	0	1	0	0	0	1	0	0
UTAH															
UTAH ST U	15	7	2	1	2	0	12	0	21	0	6	0	27	0	0
VERMONT															
U OF VERMONT	05	1	0	0	2	0	3	0	0	0	0	0	0	0	0
VIRGINIA															
VIRGINIA POLY INST	15	0	13	11	14	0	38	0	1	1	0	1	1	2	0
WASHINGTON															
WASHINGTON ST U	15	19	15	9	8	0	51	0	2	0	0	0	2	0	1
WEST VIRGINIA															
WEST VIRGINIA U	15	5	3	5	6	0	19	0	3	0	0	0	3	0	0
WISCONSIN															
WISCONSIN ST U	05	6	0	0	0	0	6	0	0	0	0	0	0	0	0
WYOMING															
U OF WYOMING	15	6	2	8	10	0	26	1	4	2	0	0	4	2	4
TOTAL U.S.		455	416	439	544	20	1874	13	245	70	184	27	431	97	101

TABLE -12

Title: Agricultural Engineering - Fall 1969

Source: Engineers Joint Council, 1970

WILL INDUSTRIAL DEVELOPMENT BE HINDERED BY THE LOSS OF SDSU'S ENGINEERING SCHOOL?

The presence of an engineering school has different degrees of attractiveness for different industries. The closer the operation is to a high technology area (i.e. electronics, etc.), the higher the need for a near-by engineering school. This is still only partly true since it is also dependent on the type of plant, manufacturing vs. research and development. The more the research and development function, the greater the need for an engineering college.

One must also understand that there are factors that will out rank the engineering school question in determining the location of a plant. Factors such as tax structure within the state, labor base, and supporting industry.

Industry uses the engineering schools for consultants, continuing education and research. There is no reason why one engineering school can't supply all of these services for S.D. if called to do so.

I think that in the future, the presence of a strong engineering school within the state of S.D. will pay dividends in the economic growth of the state. To state that one of the main reasons for anyone of our present industries locating in S.D., is the presence of an engineering college, is stretching the point at this stage of development. Most of the industry, as is the case with 3M at Brookings, is basically manufacturing plants which have low levels of interactions with engineering schools.

V. Summary

There appear to be convincing arguments for consolidation of the engineering programs within S.D. The current programs at both SDSU and SDSM&T are good programs but if consolidation occurred, there would exist greater potential to having an outstanding program. Little hope can be held out for expanding enrollments from the available pool of college age people in South Dakota which would justify two strong programs. It is also doubtful that the state can increase the funding to a level which will insure quality programs at the two schools. A pulling together of academic offerings in many collegiate programs, not only engineering, throughout the state would provide a better system of higher education for the student and taxpayer.

The perplexing question on consolidating engineering programs is to what degree consolidation should take place. Graduate programs should definitely be consolidated into one program. Neither school has the resources to climb the ladder of success very far in the face of stiff national competition. The financial savings at the graduate level are not great and therefore justification of the consolidation rests on an improved academic program (quality).

Consolidation of just the graduate programs raises greater problems than it solves. An undergraduate bachelors degree program without a graduate program is a weak program (there are some fields of engineering where graduate school interaction is not critical but there are a scant few). It then appears that both economically and pedagogically, consolidation of just the graduate program is an unacceptable alternative. The only possibility might be a reorganization of the undergraduate program at SDSU into a general engineering program which could be strong without a graduate program.

Consolidation of both the graduate and upper division is much more attractive. The high cost upper division instruction with its attendant specialized laboratories would result in substantial net dollar savings and a greatly improved degree granting program at SDSM&T. This alternative would also provide the "support" to Ag.E. and other units at SDSU they say are needed. We are apprehensive about this alternate because of the potential difficulty of containing a two-year engineering program.

Combination of all levels results in substantial savings and eliminates the pit falls of a partial consolidation. There is no reason why other academic units as SDSU would be set back or even be affected to any measurable degree by such a move. I believe that the research effort would even be strengthened by not relying on part-time personnel from another college.

References

1. Journal of Engineering Education, January, 1970
2. Journal of Engineering Education, February, 1970
3. National Science Foundation, Publication NSB 69-2, 1969
4. The Chronicle of Higher Education, October 26, 1970

PROGRAMS PROPOSED THROUGH 1975-1976

Undergraduate	Graduate (Master's)	Specialist (Six-Year)	Graduate (Doctor's)
Accounting	Biology General		Bacteriology
Safety Education	Higher Teaching		Bio-Physics
Architectural Engineering	Acoustical Engineering		Botany General
Chemical Engineering	Aerospace Engineering		Pharmacology
Computer Science	Architectural Engineering		Zoology General
Industrial Engineering	Chemical Engineering		Industrial Management
Radio and Television	Computer Science		Electrical Engineering
Forestry	Industrial Engineering		Mechanical Engineering
Philosophy	Geography		Pharmacognosy
Experimental Psychology	Hospital Administration		Pharmaceutical Chemistry
Liberal Arts Religion	Nursing		Pharmacy
Asian Studies	Criminology and Correction		
Criminology and Correction	History		
Latin American Studies	Latin American Studies		
Police Science	Political Science		
Public Administration			
Regional S City Planning			

UNIVERSITY OF SOUTH DAKOTA

PROGRAMS PROPOSED THROUGH 1975-1976

Undergraduate	Graduate (Master's)	Specialist (Six-Year)	Graduate (Doctor's)
Physiology	Journalism		Biological Science General
Science Writing	Art - General		Biology General
History (Fine & Applied Arts)	Art Education		Botany General
Photography	Ceramics		School Psychologist (Non-Teach.
Church & Sacred Music	Commercial Art		Elem. Supervision (Non-Teaching
Musicology	Design		Secondary Supervision (Non-Teac
Geography	Graphics		English
Nursing	Painting		Literature
Occupational Therapy	Sculpture		Speech & Drama (Speech)
Physical Therapy	Church & Sacred Music		Speech & Drama (Speech Corr.)
Linguistics	Musicology		Social Psychology
Astronomy	Music Education		Government
Meteorology	Hospital Administration		History
Paleontology	Physical Therapy		Political Science
Religious Education & Bible	Library Science		
Criminology and Correction	Linguistics		
International Relations	Management Science		
Latin American Studies	Paleontology		
Police Science	Social Psychology		
Regional & City Planning	Anthropology		
Urban Studies	Criminology & Correction		
French Area	International Relations		
German Area	Latin American Studies		
Driver's Education	Regional & City Planning		
	Social Work		
	Urban Studies		
	French Area		
	German Area		

SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY

PROGRAMS PROPOSED THROUGH 1975-1976

Undergraduate	Graduate (Master's)	Specialist (Six-Year)	Graduate (Doctor's)
Computer Science General Biology			Chemical Engineering Meteorology Physics

NORTHERN STATE COLLEGE

PROGRAMS PROPOSED THROUGH 1975-1976

Undergraduate	Graduate (Master's)	Specialist (Six-Year)	Graduate (Doctor's)
Health Education Non-Teaching	Biology General	Secondary Teaching (Admin.)	Elementary Teaching
Safety Education	Special Ed. Speech Correction		Secondary Teaching
Recreation Education Non-Teach.	School Psychologist Non-Teach		
Coaching Sports Non-Teaching	Creative Writing		
Music Applied	English		
Theory & Composition	Art Education		
Music Literature	Music Education		
Speech and Drama (Speech Corr.)	Speech and Drama (Speech)		
Art-Industrial Arts Combination	Speech and Drama (Speech Cor)		
Geography	Mathematics		
Library Science	Health and Physical Ed. & Rec.		
Linguistics	Chemistry		
Educational Psychology	Educational Psychology		
Distributive Education	Physical Science General		
Eng. & Journalism (Journalism)			
Psychology (General)			

BLACK HILLS STATE COLLEGE

PROGRAMS PROPOSED THROUGH 1975-1976

Undergraduate	Graduate (Master's)	Specialist (Six-Year)	Graduate (Doctor's)
ildlife Biology	Counseling & Guidance (Non-Teaching)		Elementary Teaching
pecial Ed. (Exceptional Child.)			
pecial Ed. (Mentally Retd.)	Curriculum & Instruction (Non-Teaching)		
pecial Ed. (Physically Handi.)			
pecial Ed. (Speech Correction)	Educational Admin. (Non-Teach.)		
peech & Drama (Speech Corr.)	Elem. Supervision (Non-Teach.)		
erman	Secondary Supervision (Non-Teaching)		
ussian			
afety Education	General Biology		
oaching Sports Non-Teaching	Eng. & Journalism (English)		
nglish & Journalism (Journalism)			
ine & Applied Arts (French)	Fine & Applied Arts (Mus.Ed.)		
ine & Applied Arts (Spanish)	Fine & Applied Arts (Speech and Drama)		
eography			
ealth Professions (Physical Therapy)	Social Science (History)		
ibrary Science			
hysical Science (Physics)			
sychology (Educational)			
sychology (General)			
ocial Science (Crim. & Corr.)			
ocial Science (Economics)			
ocial Science (Government)			
ocial Science (Political Sci.)			
ocial Science (Sociology)			

DAKOTA STATE COLLEGE

PROGRAMS PROPOSED THROUGH 1975-1976

Undergraduate	Graduate (Master's)	Specialist (Six-Year)	Graduate (Doctor's)
Botany General	Biological Science General		
Wildlife Conservation	Biology General		
Zoology General	Secondary Teaching		
Accounting	Special Ed. (Ment. Retd.)		
Data Processing	Counseling & Guid. (Non-Teach.)		
Special Ed. (Mentally Retd.)	Elem. Supervision (Non-Teach.)		
Special Ed. (Speech Correction)	Secondary Supervision (Non-Teaching)		
Educational Media Non-Teaching			
Early Childhood Ed. Non-Teach.	Early Childhood Ed. (Non-Teaching)		
Journalism			
Photography	English		
Piano	Music Education		
Theory and Composition	Speech & Drama		
Speech and Drama (Speech)	Mathematics		
Speech & Drama (Speech Corr.)	Health & Physical Ed. & Rec.		
Speech and Drama (Theater)	History		
Spanish	Social Studies or Social Sci.		
Philosophy			
Educational Psychology			
Police Science			
Rural Life & Sociology			
Physics			

SOUTHERN STATE COLLEGE

PROGRAMS PROPOSED THROUGH 1975-1976

Undergraduate	Graduate (Master's)	Specialist (Six-Year)	Graduate (Doctor's)
Art Education	Vocational Teachers Education		
French			
German			
Library Science			
Government			
Political Science			
Aviation			
Trade and Industrial			
Welding-Industrial Technology			
Driver's Education			

APPENDIX A-1

ENGINEERING

There has been a great deal of discussion about the number of engineering colleges needed in South Dakota.

Those in favor of continuing with two Colleges of Engineering argue that the vast geographical area of South Dakota would dictate two Colleges of Engineering -- one in the eastern half and one in the western half. They will further list as arguments the fact that North Dakota has two Colleges of Engineering as does Montana. Perhaps the most popular argument used by those who favor the continuance of two Colleges of Engineering is that they are imperative for the industrial development of the state. Examples will be given of how the presence of a College of Engineering has been instrumental in attracting business and industry to a given area. Specific examples such as 3-M in Brookings and CDC in Rapid City have been made. Further, it has been argued that the location of the EROS Center at Sioux Falls was partly determined by the geographical proximity of a College of Engineering at Brookings. It is not difficult for one to quote a "top executive" from one of the companies which has recently located in a given community to the effect that the reason was primarily due to the existence of an institution, or of a College of Engineering, or of some other specific program. We submit that the problem is much more complex than that.

With respect to the geographical argument, we hasten to point out that while North Dakota has two Colleges of Engineering, both of them are on the extreme eastern end of the state. Further, the two have been combined into a single College of Engineering with the faculty members crosslisted from one campus to the other. At the present time, they still have two deans but they are considering changing this. Both of Montana's Colleges of Engineering are located in the southwestern quarter of the state. Again, we wish to emphasize that South Dakota has more Colleges of Engineering per 100,000 population than virtually all other states. Minnesota, which is somewhat larger geographically than South Dakota and with five times the population, has only a single College of Engineering in the entire state. Yet its industrial development has far exceeded that of North Dakota's, South Dakota's, or Montana's. It is our own belief that the geography factor has been greatly over-emphasized with respect to Colleges of Engineering and that one College of Engineering in either the western or eastern part of the state would present no geographic problems to business and industry who wanted to make use of the college. We know of specific instances where firms in Sioux Falls have worked closely with the South Dakota School of Mines & Technology Engineering School. We are reasonably certain that firms in Rapid City have worked with the College of Engineering at South Dakota State University. In terms of travel time by commercial airliner, Sioux Falls is approximately one hour's distance from Rapid City. Flying time in a smaller, charter-type plane would be approximately two hours. It is our opinion that this time factor is of no great importance to a firm if it needs engineering assistance.

Although much has been said to the effect that the Colleges of Engineering are needed to promote the industrial development of the state, no one has come forth with any specific evidence to indicate that the presence of a College of Engineering or research services is a major factor to be considered by a firm in location. Although we acknowledge that one or more firms may indicate they located where they did because of the presence of a College of Engineering, the main question is how important is a College of Engineering to the total industrial development of the state of South Dakota. We know of no one who has the exact answer but we think we have some clues into this.

In 1958, Businessweek magazine questioned 283 industrial officials concerning their preference of states in which to locate new facilities. At that time, California was the state preferred over any other and Ohio ranked second. The principal reasons cited included (1) market accessibility (41% of the total), (2) labor availability, (3) reasonable taxes, (4) raw materials accessibility, (5) transportation, and (6) labor costs.

The Bureau of Business Research at Ohio State University did a comprehensive study of factors of industrial location in Ohio from 1939 to 1963. A total of 545 manufacturing companies located in Ohio during that period of time. These companies represented industry from every section of the state. Personal interviews were held with responsible representatives of 396 of the companies and questionnaires were sent to an additional 375 companies of which 149 returned questionnaires proved to be useful. Of the total of 545 responses, 73% were based on personal interviews and 27% on questionnaires. Eighteen different location factors were mentioned by the 545 firms. Only five of the 18 factors were mentioned by more than 10% of the 545 firms. The five principal factors were:

1. Market accessibility
2. Labor factors
3. Residence of the owner
4. Available building and/or site
5. Raw material availability

Other factors listed were purchase of a "going" concern, related manufacturing experience, transportation facilities, financial or planning aid, utilities, changing company structure, size of community, and plant linkage.

The bottom five factors were: tax structure, research facilities, lack of competition, government influence, and inventive genius. It should be emphasized that this was a study of over 500 firms covering a period of approximately 25 years, and the presence of research facilities ranked 15th out of 18 location factors. We have talked with chief executives of a number of firms and have yet to find one who indicated that the chief factor to be considered in location is the presence of a College of Engineering or of an institution of higher education. Many other factors are considered first and this narrows the location down to a relative few locations. Once the choice has been very much narrowed, then factors such as institutions of higher education and Colleges of Engineering play a role.

With respect to the EROS project in Sioux Falls, we have talked with those persons who were involved from the beginning on this project. The Regents' Washington representative was directly involved in that project as were a number of persons from Sioux Falls. This office has asked those people what caused EROS to be located in Sioux Falls and always two answers were given. First, because of the nature of the project, location had to be limited to a given geographical area in the United States which covered parts of South Dakota, Nebraska, Iowa, and Minnesota. Secondly, once the broad geographical perimeters were defined, the next factor that determined the location was that of politics.

If one argues that two Colleges of Engineering are essential to the industrial development of the state, the case could probably be made to create one or two additional Colleges of Engineering. There were three Colleges of Engineering in South Dakota up until the 1930's and yet, the state saw very little industrial development. We doubt that many people would support this.

It is further argued that the presence of a College of Engineering makes possible the receiving of outside grants in large numbers. This may be true. We would submit, however, that the consolidation of the two Colleges of Engineering into one would improve the quality and should enable the state to receive more grants than it is now receiving. All factors considered, it is very difficult to develop strong arguments for the continuance of two Colleges of Engineering in South Dakota.

APPENDIX C

COST ADVANTAGES OF CLOSING CAMPUSES

If there are to be cost savings in closing a campus, they will be through savings in the operating budget or savings in the capital budget. One might naturally conclude that inasmuch as a number of buildings are already located on the two campuses, it would not be wise to abandon the campuses and duplicate the facilities elsewhere. If the facilities had to be duplicated elsewhere, it could only be justified if savings in operating costs more than offset the cost of the buildings to be duplicated.

Table I shows the investment in the physical plant on the two campuses. It can be seen that the total investment at DSC is $5,653,157 and at SSC is $4,268,980. It should be pointed out that a Science Building is contemplated for construction at DSC beginning in 1971 at a budgeted cost of $1,100,000. In addition, a classroom building for SSC is on the Regents' priority list at an estimated cost of $1,384,000. Construction of these two buildings could take place, of course, on other campuses in South Dakota if deemed desirable by the Regents and legislators.

The Regents' priority list consists of the following buildings:

1. Library Learning Center - BHSC - $1,657,500
2. Electrical-Engineering Physics Building - SDSM&T - $1,819,000
3. Fine Arts Center - USD - $3,050,000
4. Library Addition - NSC - $1,188,000
5. Science Center Addition - USD - $3,240,000
6. Classroom Building - SSC - $1,384,000
7. Remodeling of Scobey Hall - SDSU - $500,000

In order to do a cost analysis of the possible economies to be achieved in closing the two campuses, two questions have to be answered:

1. What are the potential operating budget savings of such a move?
2. To what extent will be buildings presently on the two campuses proposed for closure have to be duplicated on the other campuses and what will be the costs?

A. Potential Operating Budget Savings

Operating budget savings may be achieved through either academic or administrative cost savings or both. Major economies can be achieved through closing a campus because many of the administrative costs will not have to be duplicated elsewhere. As an example, if two campuses are closed, it is not necessary to duplicate the salaries of the two Presidents on the campuses which have been closed. Other administrative savings can be major and need not be duplicated. The number of Dean of Students will drop from seven to five and similarly with Business Managers and Directors of Physical Plants. Tables II, III and IV give an analysis of potential operating cost savings. Table II is a listing of the maximum possible cost savings for the two campuses. While it shows an area of potential savings in operating budget, it does not necessarily follow that all of these savings can be realized. Tables IIa and IIb show the total cost for administration on the two campuses to be $1,341,191. The reason it is unlikely that all of these costs could be eliminated if the two campuses were closed and the students were elsewhere is that there will be some added administrative duties, particularly clerical, involved with the transfer of 2,300 students. That is, while the administrative costs such as Business Manager and Director of Physical Plant can be completely eliminated, some of the clerical costs will be duplicated on the other campuses -- not necessarily to the same extent as on the present campuses.

Tables IIIa and IIIb show the likely administrative cost savings if the two campuses were closed. This provides for the complete elimination of administrative costs such as Business Managers and Deans of Students, but provides some money for clerical services, etc., on the campuses to which the students would transfer. Tables IVa and IVb show the minimum administrative cost savings that would be realized, that is, only those which we know clearly would not be duplicated on the other campuses under any circumstances. The extremes in potential administrative cost savings range from $579,115 (Table III) to $1,341,191 and it is our judgement that $917,548 would be saved in administrative costs if the two campuses were closed.

A second area of potential savings is in the area of academic instruction. The question is will the same number of faculty members be required to teach the additional 2,300 students on the remaining five campuses as are now required to teach them at DSC and SSC. There is every reason to believe that some economies can be achieved in the area of academic instruction if the 2,300 students would be transferred to the other campuses. There are many small classes in virtually all areas on the remaining campuses and in many instances, the students would be absorbed into those with no additional faculty. Our estimate is that it would take, at the maximum, 2/3 as many faculty members to accommodate the 2,300 students on the remaining five campuses as it does to accommodate them on the existing two. This represents a potential savings of $595,012.

In summary, the administrative and academic savings to be realized by the closing of two campuses should approximate $1,512,560.

B. Dormitories

The unpaid balance on the dormitories at DSC and SSC is $5,098,000. This is a cost that will have to be repaid. It will not be necessary to duplicate all of the dormitory facilities at DSC and SSC on the five remaining campuses. In September, 1970, there were 444 empty beds on the seven campuses. There were 363 empty beds on the five campuses not including SSC and DSC. There were 1072 empty beds on the five campuses February, 1970. We would estimate that a modest increase in number of beds would be necessary on the remaining five campuses. Inasmuch as these are self-liquidating, however, the significant question is what is the amount of unpaid obligation on the two campuses in terms of dormitory space. This is an item of expense that would have to be handled in some manner and is one that could easily be handled through the savings in operating expenses by closing the two campuses.

C. Cost of Facilities

Academic facilities are needed for classroom space, laboratories, office space, and other purposes. It has generally been accepted by the Regents that the buildings on the priority list are going to be needed at SDSU, USD, NSC, SDSM&T, and BHSC, regardless of the number of additional students to be enrolled. That is, even if the student enrollment does not increase, it is agreed that the Fine Arts Building is necessary at USD, as is a Library addition at NSC and the remodeling of Scobey Hall at SDSU. Table V shows an analysis of the space available for each of the seven state college and university campuses with the present number of buildings and with the addition of those approved by the Regents on the priority list. The analysis shows the space available for classroom, laboratory and office use as well as libraries. Using the space standards approved by the Regents in September, 1970, it is interesting to note that with the construction of the buildings already approved by the Regents on the five remaining campuses, there will be more than adequate total space for laboratories, classrooms, offices, and libraries without duplicating any building now existing at SSC and DSC.

It is interesting to note that Table V-a shows a surplus of classroom space of 81,442 square feet. This figure was arrived at by taking all of the classroom space presently available on the seven campuses and adding that which would be provided by building the buildings on the Regents' priority list. If we subtract from the 81,442 square foot surplus the amount of classroom space proposed for the Science Building at DSC and the Classroom Building at SSC, we still get a surplus of 54,348 square feet of classroom space. In other words, even if those two buildings are not constructed, it would appear that we will have a surplus of 54,348 of classroom space assuming the present number of students.

Table V-b shows the same information but for laboratory space. It shows a projected surplus of 143,620 square feet of laboratory space and if we subtract that which is proposed for the two buildings at DSC and SSC, we then get a net surplus of 124,882 square feet.

Doing the same thing for office space, we end up with a deficit of 2,685 square feet and a surplus of library space of 37,914 square feet. The total net surplus is 214,459 square feet.

All the preceding space figures are based on the assumption of present public college enrollment in South Dakota and on the assumption that if two campuses were closed, the same number of faculty members would be utilized on the five remaining campuses. We do not think it would be necessary to duplicate the same number of faculty members on the remaining campuses but to emphasize the point of adequate space, we have used the same number for comparison purposes.

These figures show clearly that it would not be necessary to duplicate any of the academic facilities now present at DSC and SSC elsewhere if DSC and SSC were closed. Those people who contend that it doesn't make sense to close a campus because the buildings will have to be duplicated elsewhere are not familiar with the space situation in public higher education in South Dakota. Furthermore, it should again be emphasized that if those two campuses were closed, not only would we not have to duplicate those facilities elsewhere but we could save the cost of construction of those two buildings. In addition, there are no doubt other state agencies which contemplate construction of buildings in the future at taxpayers' expense. We see not particular reason why the facilities at DSC and SSC could not be provided to these state agencies whatever they might be. While we do not have many specific examples to use, we do know that the Department of Public Instruction is contemplating the construction of a major building in the not too distant future and it will be at taxpayers' expense. It would seem to us that it might be good economics to forego the construction of that building if the Department of Public Instruction could instead use the facilities at DSC. It is also possible that the Department of Charities and Corrections might make good use of some of the facilities at SSC. This is not to suggest that we are recommending these courses of action but merely to point out the possible alternative uses of those two campuses.

Table I
OFFICE OF THE COMMISSIONER
Effect of Closing DSC & SSC on the Regent's Capital Improvements

12-15-70

	Present	Eliminated	Revised
DSC Science Classroom *	$ 1,100,000	$1,100,000	$ -0-
BHSC library Learning Center	1,657,500		1,657,500
SDSM&T Electrical Engineering Physics Building	1,819,000		1,819,000
USD Fine Arts Center	3,050,000		3,050,000
NSC Library Learning Center	1,188,000		1,188,000
USD Science Center Addition	3,240,000		3,240,000
SSC Classroom Building	1,384,000	1,384,000	-0-
SDSU Remodel Scobey Hall	500,000		500,000
	$13,938,500	$2,484,000	$11,454,500

Bonded Debt (As of 6-30-70) - DSC	$2,635,000	
SSC	2,463,000	**
Total	5,098,000	

Investment in Buildings & Structures (As of 6-30-70) - DSC	$5,653,157
SSC	4,268,980
Total	$9,922,137

* This project has been funded, but the contract has not been awarded.

** Includes $1,000,000 Dorm Bonds under construction.

Table II-A

OFFICE OF THE COMMISSIONER

Maximum Possible Administrative Cost Savings to be derived from Closing DSC

12-28-70

General Administration - All dollars budgeted to this **program**	$ 96,496
General Expense - All dollars budgeted to this program except fringe benefit costs for faculty positions not eliminated	186,373
Physical Plant - All dollars budgeted to this program	196,468
Library - All dollars budgeted to this program	91,150
College Dean - All dollars budgeted to this activity	29,746
Band & Athletics - 3 FTE faculty x $9,530 FY '71 mean salary	28,590
Academic Administration - 6 FTE faculty x $12,894 FY '71 mean salary	77,364
TOTAL	$706,187

NOTE 1 - Out of an instructional budget of $860,748, $725,048 would be left to allocate to other institutions for students transferred. This would allow $580 for each student transferred which compares to the present $689 instructional cost per student for DSC.

NOTE 2 - Out of a non-instructional budget of $647,881, $77,394 would be left to allocate to other institutions for students transferred.

Table II-B
OFFICE OF THE COMMISSIONER
Maximum Possible Administrative Cost Savings to be derived from Closing SSC

12-28-70

General Administration - All dollars budgeted to this program	$112,749
General Expense - All dollars budgeted to this program except fringe benefit costs for positions not eliminated	106,133
Physical Plant - All dollars budgeted to this program	162,852
Library - All dollars budgeted to this program	89,735
College Dean - All dollars budgeted to this activity	26,901
Band & Athletics - 3 FTE faculty x $8,963 FY 71 mean salary	26,889
Academic Administration - 8.47 FTE faculty x $12,957 FY 71 mean salary	109,745
TOTAL	$635,004

NOTE 1 - Out of an instructional budget of $942,322, $778,787 would be left to allocate to other institutions for students transferred. This would allow $750 for each student transferred which compares to the present $918 instructional cost per student for SSC.

NOTE 2 - Out of a non-instructional budget of $544,417, $72,948 would be left to allocate to other institutions for students transferred.

Table III-A
OFFICE OF THE COMMISSIONER
Likely Administrative Cost Savings to be derived from Closing DSC

12-28-70

General Administration - Excludes all business office expense except business manager's salary.	$ 68,599
College Dean - Includes all dollars budgeted to this activity	29,746
Dean of Women - Cost of position only	12,000
Dean of Students - Cost of position only	13,800
Records & Admissions - Cost of position only	13,500
Financial Aids - Cost of position only	11,000
Band & Athletics - 3 FTE faculty x $9,530 FY '71 mean salary	28,590
Academic Administration - 6 FTE administrators x $12,894 FY '71 mean salary	77,364
Librarian - Cost of position only	13,700
Communications - Includes all dollars budgeted to this activity	6,380
Memberships - Includes all dollars budgeted to this activity	2,137
Institutional Development - Includes all dollars budgeted to this activity	49,655
Physical Plant - This figure represents [illegible]/4 of the total budget for this program.	147,351
TOTAL	$473,822

NOTE 1 - Out of an instructional budget of $860,748, $725,048 would be left to allocate to other institutions for students transferred. This would allow $580 per student transferred which compares to the present $6[illegible] instructional cost per student for DSC.

NOTE 2 - Out of a non-instructional budget of $647,881, $309,759 would be left to allocate to other institutions for students transferred.

Table III-B
OFFICE OF THE COMMISSIONER
Likely Administrative Cost Savings to be derived from Closing SSC

12-28-70

General Administration - Excludes all business office expense except business manager's salary	$ 65,642
College Dean - Includes all dollars budgeted to this activity	26,901
Dean of Women - Cost of position only	5,291
Registrar - Cost of position only	12,355
Admissions - Cost of position only	13,127
Dean of Students - Cost of position only	12,558
Financial Aids - Cost of position only	8,959
Band & Athletics - 3 FTE faculty x $8,963 FY 71 mean salary	26,889
Academic Administration - 8.47 FTE faculty x $12,957 FY 71 mean salary	109,745
Librarian - Cost of position only	8,921
Placement - Includes all dollars budgeted to this activity	3,427
Special Services - Includes all dollars budgeted to this activity	26,039
Publications - Includes all dollars budgeted to this activity	1,733
Physical Plant - This figure represents 3/4 of the total budget for this program	122,139
TOTAL	$443,726

NOTE 1 - Out of an instructional budget of $942,322, $778,787 would be left to allocate to other institutions for students transferred. This would allow $750 per student transferrred which compares to the present $918 instructional cost per student at SSC.

NOTE 2 - Out of a non-instructional budget of $544,417, $264,226 would be left to allocate to other institutions for students transferred.

Table IV-A
OFFICE OF THE COMMISSIONER
Minimum Administrative Cost Savings to be derived from Closing DSC

12-28-70

President	$ 21,000
Business Manager	14,750
College Dean	21,000
Dean of Women	12,000
Dean of Students	13,800
Records & Admissions	13,500
Financial Aids	11,000
Institutional Development	49,655
Academic Administration - 6 FTE faculty x $12,894 FY '71 mean salary	77,364
Band & Athletics - 3 FTE faculty x $9,530 FY '71 mean salary	28,590
Librarian	13,700
Director of Physical Plant	12,500
TOTAL	$288,859

NOTE - All figures represent the cost of positions only, except Institutional Development which is all dollars budgeted to that activity.

Table IV-B
Minimum Administrative Cost Savings to be derived from Closing SSC

12-28-70

President	$ 22,500
Business Manager	13,898
College Dean	21,000
Dean of Women	5,291
Registrar	12,355
Admissions	13,127
Dean of Students	12,558
Financial Aids	8,959
Special Services	26,039
Band & Athletics - 3 FTE faculty x $8,963 FY '71 mean salary	26,889
Academic Administration - 8.47 FTE faculty x $12,957 FY '71 mean salary	109,745
Librarian	8,921
Director of Physical Plant	8,974
TOTAL	$290,256

NOTE - All figures represent the cost of positions only, except Special Services which is all dollars budgeted to that activity.

OFFICE OF THE COMMISSIONER
Effect of Closing DSC & SSC
Summary of Cost Data
12-28-70

I. Cost Savings	DSC	SSC	Total
Operating Budget			
Administration	$ 443,726	$ 473,822	$ 917,548
Academic	310,966	284,046	595,012
Subtotal (See Note 1)	$ 754,692	$ 757,868	$ 1,512,560
Capital Budget	1,100,000	1,384,000	2,484,000
Total (See Note 2)	$1,854,692	$2,141,868	$ 3,996,560
II. Investment in Building			
Buildings & Structures - (Not including bonds outstanding)	$3,018,157	$2,805,980	$ 5,824,137
Bonds Outstanding	2,635,000	2,463,000	5,098,000
Total (See Note 3)	$5,653,157	$5,268,980	$10,922,137

Note 1 - The total of $1,512,560 would represent a continuing year after year savings.

Note 2 - The total of $3,996,560 would represent a first year potential savings. The capital budget portion would be a one time savings only.

Note 3 - The total of $10,922,137 would represent the amount of investment in plant and bond debt that would offset the first year savings and continued annual operating budget savings until completely amortized - about 5½ years.

Table V a

NET ASSIGNABLE SQUARE FEET - CLASSROOM REQUIREMENTS

Institution (1)	Average Hours Student in Classrooms (2)	Space Standard (3)	Required Square Feet Per Student (Col 2 x Col 3) (4)	Classroom Square Feet Available 1969 (5)	Classroom Square Feet Structurally Unsound (6)	Structurally Sound Classroom Square Feet Available (Col 5 - Col 6) (7)	Classroom Square Feet Programmed (8)	Net Classroom Square Feet Available (9)	1970 FTE Enrollments (10)	Classroom Needs W/Current FTE Enrollments (Col 4 x Col 10) (11)	Overall +Coverage/ -Deficiency (Col 9 - Col 11) (12)
SDSU	12.79	0.78	9.98	56,914	-	56,914	2,955	59,869	6,071	60,589	- 720
USD	13.28	0.87	11.55	52,333	2,095	50,238	14,261	64,499	4,727	54,597	+ 9,902
SDSM&T	13.80	0.97	13.39	23,130	-	23,130	6,500	29,630	1,694	22,683	+ 6,947
NSC	11.91	0.83	9.89	25,509	-	25,509	18,766	44,275	3,067	30,333	+ 13,942
BHSC	13.37	0.83	11.10	41,956	-	41,956	780	42,736	2,286	25,375	+ 17,361
DSC	13.55	0.93	12.60	18,474	-	18,474	9,438	27,912	1,249	15,737	+ 12,175
SSC	9.12	0.93	8.48	12,981	-	12,981	17,656	30,637	1,038	8,802	+ 21,835
TOTAL	-	-	-	231,297	2,095	229,202	70,356	299,558	20,132	218,116	+ 81,442

Table V b

NET ASSIGNABLE SQUARE FEET - LABORATORY REQUIREMENTS

Institution (1)	Average Hours Student in Laboratories (2)	Space Standard (3)	Required Square Feet Per Student (Col 2 x Col 3) (4)	Laboratory Square Feet Available 1969 (5)	Laboratory Square Feet Structurally Unsound (6)	Structurally Sound Laboratory Square Feet Available (Col 5 - Col 6) (7)	Laboratory Square Feet Programmed (8)	Net Laboratory Square Feet Available (9)	1970 FTE Enrollments (10)	Laboratory Needs W/Current FTE Enrollments (Col 4 x Col 10) (11)	Overall +Overage/ -Deficiency (Col 9 - Col 11) (12)
SDSU	5.70	3.95	22.52	117,191	2,131	115,060	5,447	120,507	6,071	136,719	- 16,212
USD	3.53	4.30	15.18	44,103	-	44,103	98,430	142,533	4,727	71,756	+ 70,777
SDSM&T	5.68	4.71	24.42	44,347	-	44,347	22,500	66,847	1,694	41,367	+ 25,480
NSC	3.70	2.42	8.95	30,108	812	29,296	7,058	36,354	3,067	27,450	+ 8,904
BHSC	2.60	2.63	6.84	21,709	-	21,709	-	21,709	2,286	15,636	+ 6,073
DSC	3.50	2.63	9.21	16,501	-	16,501	9,090	25,591	1,249	11,503	+ 14,088
SSC	11.45	2.63	30.14	56,147	-	56,147	9,648	65,795	1,038	31,285	+ 34,510
TOTAL	-	-	-	330,106	2,943	327,163	152,173	479,336	20,132	335,716	+143,620

NET ASSIGNABLE SQUARE FEET - OFFICE REQUIREMENTS

Table V c

Institution (1)	Space Standard Per FTE Occupant (2)	FTE Occupants 1970 (3)	Office Square Feet Available 1969 (4)	Office Square Feet Structurally Unsound (5)	Structurally Sound Office Square Feet Available (6)	Office Square Feet Programmed (7)	Net Office Square Feet Available (8)	Office Needs (Col 2 x Col 3) (9)	Overall +Overage/ -Deficiency (Col 8 - Col 9) (10)
SDSU	140	958	138,467	8,476	129,991	18,766	148,757	134,120	+ 14,637
USD	140	645	97,967	355	97,612	12,939	110,551	90,440	+ 20,111
SDSM&T	140	283	33,092	-	33,092	9,540	42,632	39,620	+ 3,012
NSC	140	259	34,161	84	34,077	959	35,036	36,260	- 1,224
BHSC	140	179	20,336	-	20,336	1,623	21,959	25,060	- 3,101
DSC	140	126	20,806	-	20,806	10,663	31,469	17,640	+ 13,829
SSC	140	132	15,416	-	15,416	4,340	19,756	18,480	+ 1,276
TOTAL	-	2,583	360,245	8,915	351,330	58,830	410,160	361,620	+ 48,540

NET ASSIGNABLE SQUARE FEET - LIBRARY (STUDY) REQUIREMENTS

Table V

Institution (1)	Volumes on Hand 1970 (2)	Square Feet For Volumes (3)	FTE Student Enrollments 1969 (4)	Space Standard (% of Students Housed) (5)	Students Requiring Study Space (Col 4 x Col 5) (6)	Study Square Feet Requirement (Col 6 x 25NASF) (7)	FTE Processing Personnel 1970 (8)	Processing Space Requirement (Col 8 x 200) (9)	Square Feet Library Space Available 1969 (10)	Space to be Gained by Construction (11)	Net Square Feet Library Space Available (12)	Net Library Space Requirements (Col 3 + Col 7 + Col 9) (13)	Overall +Overage/ -Deficiency (Col 12 - Col 13 (14)
SDSU	208,000	20,220	6,071	22.5	1,366	34,150	16	3,200	30,861	-	30,861	57,570	- 26,709
USD	250,000	24,900	4,727	25.0	1,182	29,550	27	5,400	64,829	-	64,829	59,850	+ 4,979
SDSM&T	66,000	6,600	1,694	27.5	466	11,650	9	1,800	6,842	43,216	50,058	20,050	+ 30,008
NSC	112,000	11,200	3,067	22.5	690	17,250	13	2,600	16,059	35,711	51,770	31,050	+ 20,720
BHSC	47,000	4,700	2,286	25.0	572	14,300	8	1,600	15,641	41,075	56,716	20,600	+ 36,116
DSC	50,000	5,000	1,249	25.0	312	7,800	7	1,400	26,560	-	26,560	14,200	+ 12,360
SSC	53,000	5,300	1,038	25.0	260	6,500	6	1,200	19,708	-	19,708	13,000	+ 6,708
TOTAL	795,000	77,920	20,132	-	4,848	121,200	86	17,200	180,500	120,002	300,502	216,320	+ 84,182

SUMMARY OF CLASSROOM, LABORATORY, OFFICE AND LIBRARY NET ASSIGNABLE SQUARE FEET REQUIREMENTS

Table V e

Institution (1)	Classroom (2)	Laboratory (3)	Office (4)	Library (5)	Total (6)
SDSU	- 720	- 16,212	14,637	- 26,709	- 29,004
USD	9,902	70,777	20,111	4,979	105,769
SDSM&T	6,947	25,480	3,012	30,008	65,447
NSC	13,942	8,904	- 1,224	20,720	42,342
BHSC	17,361	6,073	- 3,101	36,116	56,449
DSC	12,175	14,088	13,829	12,360	52,452
SSC	21,835	34,510	1,276	6,708	64,329
TOTAL	81,442	143,620	48,540	84,182	357,784

All figures show excess space needs except those preceded by the minus sign.

APPENDIX D

ESTIMATED SAVINGS
IF BHSC, DSC, AND SSC ARE CONVERTED TO JUNIOR COLLEGES

The potential savings of converting campuses to junior colleges are much smaller than if they are closed. When they are closed, one can definitely predict the administrative cost savings. If they are converted to junior college branches, it is difficult to estimate the cost savings but it is fairly clear that potential savings would be much lower. For example, if campuses are converted to junior colleges, one still needs most of the administrative people on that campus, that is, a Dean of the College, Business Office people (although fewer in number), a Dean of Students, etc. Because of a very close working relationship between the main campus and the two-year branch campus, there would be some savings in most of the administrative offices and some areas of duplication could be eliminated. It would not be necessary to have two distinct Admissions Offices because the main campus could handle the requests for application for admission for that campus as well as the branch. Nevertheless, there would need to be some personnel on the branch campus to keep grade records, etc., of the students. With a close computer tie-in, we would anticipate that the parent campus could handle much of the bookkeeping activities from that location. We estimate a potential savings on administration of $440,146 if the three campuses were converted to two-year branch campuses. The total amount now spent on those three campuses for general administration, general expense, College Dean, and academic administration is $1,320,439. We estimate that at least 1/3 of this amount could be saved in administration if the three campuses were converted to two-year branch campuses.

Perhaps a much bigger area for potential savings is in the academic area. Normally, most of the classes of small size occur at the junior and senior level. By eliminating the junior and senior level of instruction, a high percent of the courses of small size are eliminated. This has a double advantage in that you completely eliminate the chance for small classes at the junior and senior level on the three campuses mentioned, and you reduce the chances for small courses on the four remaining campuses in that you are going to increase their junior and senior enrollments. Further, there will be less of a tendency for program proliferation on a branch campus than if it is freestanding. While there is every reason to believe that much of this program proliferation can be controlled in the future, it nevertheless is true that it is somewhat easier when one campus is a branch of another than when it is not. The branch campus concept has another big advantage in that it expedites arrangements whereby the talents of faculty members from one campus may be utilized on another campus from time to time. Similarly, it expedites arrangements whereby students may have the branch campus as their home base but go to the parent campus for certain courses and then return to the home campus.

An intangible advantage of having a branch campus at, for example, SSC and DSC is that if they become branch campuses and are renamed University of South Dakota at Springfield and South Dakota State University at Madison, it would be somewhat easier to recruit faculty members (and retain them) and also would add to the value of the transcript from that institution. Whether one cares to admit it or not, other things being equal, the student whose transcript shows University of South Dakota at Springfield will have an advantage over the same student if his transcript shows Southern State College. We can't quantify the value of that but it nevertheless is there.

APPENDIX E

QUALITY OF ACADEMIC PROGRAMS

Although the economics of the matter is of great importance in arriving at a recommended Master Plan, we think the quality aspect is at least as important. If it could be shown clearly that money could be saved by closing a campus but that in so doing the quality of higher education deteriorated, then we would not support such a move. Defining the quality of academic programs is at best a highly subjective kind of thing. There are a number of individuals and/or groups in the country which have attempted to determine the quality of academic programs in the various colleges and universities in the country. Always when these quantitative measures are made of quality in programs, some people react very adversely.

From the educators' standpoint, we would like to make two fundamental observations:

1. It is not absolutely necessary to have large numbers of students in a program in order to have a quality program.
2. It is difficult in most instances to have quality programs unless there is considerable depth in the faculty in a given area of instruction. In other words, it would be almost impossible to have a strong program in chemistry with only one or two faculty members. Similarly for physics, mathematics, biology, and most other academic areas.

Certain disciplines lend themselves better to quality programs with a relatively small number of faculty members than others. Because of the availability of tapes and other teaching aids, it is probably possible to have a quality program in most foreign languages with fewer faculty members than to have a quality program in economics or engineering.

Table I provides examples of academic programs at DSC and SSC which have relatively few faculty members as well as graduates. Similar examples can be found in certain areas on some of the other campuses.

We recognize that many institutions will be able to provide testimonials from employers that the graduates of that institution are well trained. We are well aware that all of the institutions can be proud of some of their graduates. It is also true, however, that a large number of school superintendents and principals believe many of the campuses are not doing a very good job of training teachers. Almost all professional educators, not directly connected with either of the campuses, would question whether or not a high quality major could be offered in Industrial Arts at Dakota State College with only two faculty members or in Speech at Southern State with two faculty members. This is in no way intended to reflect unfavorably upon the ability of those who are teaching in those subject matter areas at the present time. We list the eight majors for the two campuses as striking examples of programs which have been approved but which are clearly lacking in depth. Without a doubt, if the two campuses were closed and if some of those faculty members were added in those subject matter areas on other campuses, the depth of the program would be improved. From the quality standpoint, a professional educator must conclude that the overall quality of higher education in South Dakota would be improved with the consolidation of some of the campuses.

TABLE I
SELECTED STATISTICS CONCERNING ACADEMIC PROGRAMS AT DSC AND SSC

Institution and Major	No. Graduates Spring, 1970	No. FTE Faculty	No. Majors Fall, 1970
DSC			
Art	2	2.3	37
Chemistry	0	3.0	15
Industrial Arts	12	2.0	73
Music	6	3.0	21
SSC			
Biology	8	2.8	31
Mathematics	4	2.5	26
Social Science (not including History)	10	2.0	19
Speech	1	2.0	6

December 30, 1970

APPENDIX F

NUMBER OF STUDENTS FROM FIVE SELECTED COUNTIES IN ATTENDANCE AT STATE COLLEGES AND UNIVERSITIES, FALL SEMESTER - 1970

COUNTY	SDSU	USD	NSC	DSC	SSC	Subtotal	SDSM&T	BHSC	TOTAL
Custer	23	9	13	-	1	46	16	31	93
Fall River	46	15	15	-	5	81	14	37	132
Lawrence	48	49	10	-	7	114	40	554	708
Meade	179	43	8	2	-	232	46	188	466
Pennington	141	214	30	6	19	410	655	510	1,575
TOTAL	437	330	76	8	32	883	771	1,320	2,974

The above information indicates that a total of 2,974 students from five West River counties are enrolled in the seven state colleges and universities. Of this amount, 883 are in attendance at the "East River" institutions and 2,091 are in attendance at the two West River institutions. You will note that there are a total of 1,575 students enrolled from Pennington County and 708 enrolled from Lawrence County. It is rather clear that a large number of students from Pennington County enroll at BHSC. There are two main points we should like to make with respect to this information: (1) There is a rather substantial number of students (almost 900) from the five West River counties who attend state colleges and universities in the eastern part of the state. We believe that if there were a comprehensive state college located in Rapid City, a rather high percent of those who are now going east of the river would not do so. (2) If one were considering whether to locate a comprehensive state college at Rapid City or Spearfish and if other factors were considered to be equal, then based on numbers of students, Rapid City would be the more desirable location.